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(21) International Application Number: PCT/US99/30270 (22) International Filing Date: 17 December 1999 (17.12.1999) (30) Priority Data: 09/215,681 17 December 1998 (17.12.1998) US 09/216,003 17 December 1998 (17.12.1998) US 09/338,933 23 June 1999 (23.06.1999) US 09/404,879 24 September 1999 (24.09.1999) US (60) Parent Application or Grant CORIXA CORPORATION [/]; (). MITCHAM, Jennifer, L. [/]; (). KING, Gordon, E. [/]; (). ALGATE, Paul, A. [/]; (). FRUDAKIS, Tony, N. [/]; (). MAKI, David, J. ; ().		Published
(54) Title: COMPOSITIONS AND METHODS FOR THERAPY AND DIAGNOSIS OF OVARIAN CANCER (54) Titre: COMPOSITIONS ET PROCEDES DESTINES A LA THERAPIE ET AU DIAGNOSTIC DU CANCER DE L'OVAIRE		
(57) Abstract <p>Compositions and methods for the therapy and diagnosis of cancer, such as ovarian cancer, are disclosed. Compositions may comprise one or more ovarian carcinoma proteins, immunogenic portions thereof, polynucleotides that encode such portions or antibodies or immune system cells specific for such proteins. Such compositions may be used, for example, for the prevention and treatment of diseases such as ovarian cancer. Methods are further provided for identifying tumor antigens that are secreted from ovarian carcinomas and/or other tumors. Polypeptides and polynucleotides as provided herein may further be used for the diagnosis and monitoring of ovarian cancer.</p> (57) Abrégé <p>L'invention concerne des compositions et des procédés destinés à la thérapie et au diagnostic de cancers tels que le cancer de l'ovaire. Les compositions peuvent comprendre une ou plusieurs protéines du carcinome de l'ovaire, leurs parties immunogéniques, des polynucléotides codant pour ces parties ou des anticorps ou des cellules du système immunitaire spécifique à ces protéines. Ces compositions peuvent s'utiliser, par exemple, dans la prévention et le traitement de maladies telles que le cancer de l'ovaire. L'invention concerne en outre des procédés pour identifier les antigènes tumoraux sécrétés depuis les carcinomes de l'ovaires et/ou d'autres tumeurs. En outre, les polypeptides et les polynucléotides fournis ici peuvent être utilisés dans le diagnostic et la surveillance du cancer de l'ovaire.</p>		

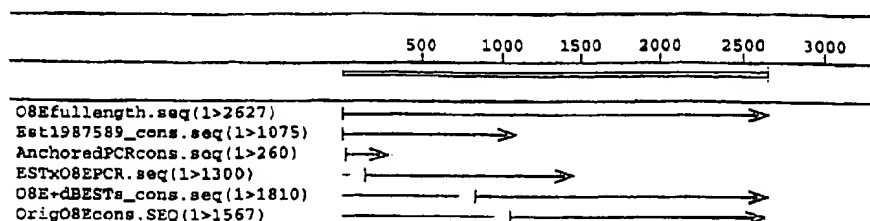
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(54) Title: COMPOSITIONS AND METHODS FOR THERAPY AND DIAGNOSIS OF OVARIAN CANCER



(57) Abstract

Compositions and methods for the therapy and diagnosis of cancer, such as ovarian cancer, are disclosed. Compositions may comprise one or more ovarian carcinoma proteins, immunogenic portions thereof, polynucleotides that encode such portions or antibodies or immune system cells specific for such proteins. Such compositions may be used, for example, for the prevention and treatment of diseases such as ovarian cancer. Methods are further provided for identifying tumor antigens that are secreted from ovarian carcinomas and/or other tumors. Polypeptides and polynucleotides as provided herein may further be used for the diagnosis and monitoring of ovarian cancer.

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Description

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COMPOSITIONS AND METHODS FOR THERAPY AND DIAGNOSIS OF
OVARIAN CANCER

TECHNICAL FIELD

The present invention relates generally to ovarian cancer therapy. The invention is more specifically related to polypeptides comprising at least a portion of an ovarian carcinoma protein, and to polynucleotides encoding such polypeptides, as well as antibodies and immune system cells that specifically recognize such polypeptides. Such polypeptides, polynucleotides, antibodies and cells may be used in vaccines and pharmaceutical compositions for treatment of ovarian cancer.

BACKGROUND OF THE INVENTION

Ovarian cancer is a significant health problem for women in the United States and throughout the world. Although advances have been made in detection and therapy of this cancer, no vaccine or other universally successful method for prevention or treatment is currently available. Management of the disease currently relies on a combination of early diagnosis and aggressive treatment, which may include one or more of a variety of treatments such as surgery, radiotherapy, chemotherapy and hormone therapy. The course of treatment for a particular cancer is often selected based on a variety of prognostic parameters, including an analysis of specific tumor markers. However, the use of established markers often leads to a result that is difficult to interpret, and high mortality continues to be observed in many cancer patients.

Immunotherapies have the potential to substantially improve cancer treatment and survival. Such therapies may involve the generation or enhancement of an immune response to an ovarian carcinoma antigen. However, to date, relatively few ovarian carcinoma antigens are known and the generation of an immune response against such antigens has not been shown to be therapeutically beneficial.

Accordingly, there is a need in the art for improved methods for identifying ovarian tumor antigens and for using such antigens in the therapy of ovarian cancer. The present invention fulfills these needs and further provides other related advantages.

SUMMARY OF THE INVENTION

Briefly stated, this invention provides compositions and methods for the therapy of cancer, such as ovarian cancer. In one aspect, the present invention provides polypeptides comprising an immunogenic portion of an ovarian carcinoma protein, or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with ovarian carcinoma protein-specific antisera is not substantially diminished. Within certain embodiments, the ovarian carcinoma protein comprises a sequence that is encoded by a polynucleotide sequence selected from the group consisting of SEQ ID NOs:1-81, 313-331, 359, 366, 379, 385-387, 391 and complements of such polynucleotides.

The present invention further provides polynucleotides that encode a polypeptide as described above or a portion thereof, expression vectors comprising such polynucleotides and host cells transformed or transfected with such expression vectors.

Within other aspects, the present invention provides pharmaceutical compositions and vaccines. Pharmaceutical compositions may comprise a physiologically acceptable carrier or excipient in combination with one or more of: (i) a polypeptide comprising an immunogenic portion of an ovarian carcinoma protein, or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with ovarian carcinoma protein-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein comprises an amino acid sequence encoded by a polynucleotide that comprises a sequence recited in any one of SEQ ID NOs:1-81, 313-331, 359, 366, 379, 385-387 or 391; (ii) a polynucleotide encoding such a polypeptide; (iii) an antibody that specifically binds to such a polypeptide; (iv) an antigen-presenting cell that expresses such a polypeptide and/or (v) a T cell that specifically reacts with such a polypeptide. Vaccines may comprise a non-specific immune response enhancer in combination with one or more of: (i) a polypeptide comprising an immunogenic portion of an ovarian carcinoma protein, or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with ovarian carcinoma protein-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein comprises an amino acid sequence encoded by a

5 polynucleotide that comprises a sequence recited in any one of SEQ ID NOs: 1-81, 313-331, 359, 366, 379, 385-387 or 391; (ii) a polynucleotide encoding such a polypeptide; (iii) an anti-idiotypic antibody that is specifically bound by an antibody that specifically
10 binds to such a polypeptide; (iv) an antigen-presenting cell that expresses such a polypeptide and/or (v) a T cell that specifically reacts with such a polypeptide.

The present invention further provides, in other aspects, fusion proteins that comprise at least one polypeptide as described above, as well as polynucleotides
15 encoding such fusion proteins.

Within related aspects, pharmaceutical compositions comprising a fusion
10 protein or polynucleotide encoding a fusion protein in combination with a physiologically acceptable carrier are provided.

Vaccines are further provided, within other aspects, comprising a fusion protein or polynucleotide encoding a fusion protein in combination with a non-specific
25 immune response enhancer.

15 Within further aspects, the present invention provides methods for inhibiting the development of a cancer in a patient, comprising administering to a patient a pharmaceutical composition or vaccine as recited above.

30 The present invention further provides, within other aspects, methods for stimulating and/or expanding T cells, comprising contacting T cells with (a) a polypeptide comprising an immunogenic portion of an ovarian carcinoma protein, or a variant thereof that differs in one or more substitutions, deletions, additions and/or
35 insertions such that the ability of the variant to react with ovarian carcinoma protein-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein comprises an amino acid sequence encoded by a polynucleotide that comprises a
40 25 sequence recited in any one of SEQ ID NOs: 1-387 or 391; (b) a polynucleotide encoding such a polypeptide and/or (c) an antigen presenting cell that expresses such a polypeptide under conditions and for a time sufficient to permit the stimulation and/or
45 expansion of T cells. Such polypeptide, polynucleotide and/or antigen presenting cell(s) may be present within a pharmaceutical composition or vaccine, for use in
30 stimulating and/or expanding T cells in a mammal.

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5 Within other aspects, the present invention provides methods for inhibiting the development of ovarian cancer in a patient, comprising administering to a patient T cells prepared as described above.

10 Within further aspects, the present invention provides methods for
5 inhibiting the development of ovarian cancer in a patient, comprising the steps of: (a) incubating CD4⁺ and/or CD8⁺ T cells isolated from a patient with one or more of: (i) a polypeptide comprising an immunogenic portion of an ovarian carcinoma protein, or a
15 variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with ovarian carcinoma protein-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein
10 comprises an amino acid sequence encoded by a polynucleotide that comprises a sequence recited in any one of SEQ ID NOs: 1-387 or 391; (ii) a polynucleotide encoding such a polypeptide; or (iii) an antigen-presenting cell that expresses such a
20 polypeptide; such that T cells proliferate; and (b) administering to the patient an effective amount of the proliferated T cells, and thereby inhibiting the development of
25 ovarian cancer in the patient. The proliferated cells may be cloned prior to administration to the patient.

30 The present invention also provides, within other aspects, methods for identifying secreted tumor antigens. Such methods comprise the steps of: (a)
20 implanting tumor cells in an immunodeficient mammal; (b) obtaining serum from the immunodeficient mammal after a time sufficient to permit secretion of tumor antigens
35 into the serum; (c) immunizing an immunocompetent mammal with the serum; (d) obtaining antiserum from the immunocompetent mammal; and (e) screening a tumor expression library with the antiserum, and therefrom identifying a secreted tumor
40 antigen. A preferred method for identifying a secreted ovarian carcinoma antigen comprises the steps of: (a) implanting ovarian carcinoma cells in a SCID mouse; (b)
45 obtaining serum from the SCID mouse after a time sufficient to permit secretion of ovarian carcinoma antigens into the serum; (c) immunizing an immunocompetent mouse with the serum; (d) obtaining antiserum from the immunocompetent mouse; and
30 (e) screening an ovarian carcinoma expression library with the antiserum, and therefrom identifying a secreted ovarian carcinoma antigen.

5 These and other aspects of the present invention will become apparent
upon reference to the following detailed description and attached drawings. All
references disclosed herein are hereby incorporated by reference in their entirety as if
10 each was incorporated individually.

5 BRIEF DESCRIPTION OF THE DRAWINGS

15 Figures 1A-1S (SEQ ID NOs:1-71) depict partial sequences of
polynucleotides encoding representative secreted ovarian carcinoma antigens.

 Figures 2A-2C depict full insert sequences for three of the clones of
Figure 1. Figure 2A shows the sequence designated O7E (11731; SEQ ID NO:72),
10 Figure 2B shows the sequence designated O9E (11785; SEQ ID NO:73) and Figure 2C
shows the sequence designated O8E (13695; SEQ ID NO:74).

 Figure 3 presents results of microarray expression analysis of the ovarian
carcinoma sequence designated O8E.

25 Figure 4 presents a partial sequence of a polynucleotide (designated 3g;
15 SEQ ID NO:75) encoding an ovarian carcinoma sequence that is a splice fusion
between the human T-cell leukemia virus type I oncoprotein TAX and ostconectin.

30 Figure 5 presents the ovarian carcinoma polynucleotide designated 3f
(SEQ ID NO:76).

 Figure 6 presents the ovarian carcinoma polynucleotide designated 6b
20 (SEQ ID NO:77).

35 Figures 7A and 7B present the ovarian carcinoma polynucleotides
designated 8e (SEQ ID NO:78) and 8h (SEQ ID NO:79).

 Figure 8 presents the ovarian carcinoma polynucleotide designated 12c
40 (SEQ ID NO:80).

25 Figure 9 presents the ovarian carcinoma polynucleotide designated 12h
(SEQ ID NO:81).

45 Figure 10 depicts results of microarray expression analysis of the ovarian
carcinoma sequence designated 3f.

30 Figure 11 depicts results of microarray expression analysis of the ovarian
carcinoma sequence designated 6b.

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Figure 12 depicts results of microarray expression analysis of the ovarian carcinoma sequence designated 8e.

Figure 13 depicts results of microarray expression analysis of the ovarian carcinoma sequence designated 12c.

Figure 14 depicts results of microarray expression analysis of the ovarian carcinoma sequence designated 12h.

Figures 15A-15EEE depict partial sequences of additional polynucleotides encoding representative secreted ovarian carcinoma antigens (SEQ ID NOs:82-310).

Figure 16 is a diagram illustrating the location of various partial O8E sequences within the full length sequence.

DETAILED DESCRIPTION OF THE INVENTION

As noted above, the present invention is generally directed to compositions and methods for the therapy of cancer, such as ovarian cancer. The compositions described herein may include immunogenic polypeptides, polynucleotides encoding such polypeptides, binding agents such as antibodies that bind to a polypeptide, antigen presenting cells (APCs) and/or immune system cells (*e.g.*, T cells).

Polypeptides of the present invention generally comprise at least an immunogenic portion of an ovarian carcinoma protein or a variant thereof. Certain ovarian carcinoma proteins have been identified using an immunoassay technique, and are referred to herein as ovarian carcinoma antigens. An "ovarian carcinoma antigen" is a protein that is expressed by ovarian tumor cells (preferably human cells) at a level that is at least two fold higher than the level in normal ovarian cells. Certain ovarian carcinoma antigens react detectably (within an immunoassay, such as an ELISA or Western blot) with antisera generated against serum from an immunodeficient animal implanted with a human ovarian tumor. Such ovarian carcinoma antigens are shed or secreted from an ovarian tumor into the sera of the immunodeficient animal. Accordingly, certain ovarian carcinoma antigens provided herein are secreted antigens. Certain nucleic acid sequences of the subject invention generally comprise a DNA or

5 RNA sequence that encodes all or a portion of such a polypeptide, or that is complementary to such a sequence.

The present invention further provides ovarian carcinoma sequences that are identified using techniques to evaluate altered expression within an ovarian tumor.

10 Such sequences may be polynucleotide or protein sequences. Ovarian carcinoma sequences are generally expressed in an ovarian tumor at a level that is at least two fold, and preferably at least five fold, greater than the level of expression in normal ovarian tissue, as determined using a representative assay provided herein. Certain partial ovarian carcinoma polynucleotide sequences are presented herein. Proteins encoded by 15 genes comprising such polynucleotide sequences (or complements thereof) are also considered ovarian carcinoma proteins.

20 Antibodies are generally immune system proteins, or antigen-binding fragments thereof, that are capable of binding to at least a portion of an ovarian carcinoma polypeptide as described herein. T cells that may be employed within the 25 compositions provided herein are generally T cells (e.g., CD4⁺ and/or CD8⁺) that are specific for such a polypeptide. Certain methods described herein further employ antigen-presenting cells (such as dendritic cells or macrophages) that express an ovarian carcinoma polypeptide as provided herein.

20 OVARIAN CARCINOMA POLYNUCLEOTIDES

35 Any polynucleotide that encodes an ovarian carcinoma protein or a portion or other variant thereof as described herein is encompassed by the present invention. Preferred polynucleotides comprise at least 15 consecutive nucleotides, preferably at least 30 consecutive nucleotides, and more preferably at least 45 40 consecutive nucleotides, that encode a portion of an ovarian carcinoma protein. More preferably, a polynucleotide encodes an immunogenic portion of an ovarian carcinoma protein, such as an ovarian carcinoma antigen. Polynucleotides complementary to any such sequences are also encompassed by the present invention. Polynucleotides may be 45 single-stranded (coding or antisense) or double-stranded, and may be DNA (genomic, cDNA or synthetic) or RNA molecules. Additional coding or non-coding sequences 30 may, but need not, be present within a polynucleotide of the present invention, and a

5 polynucleotide may, but need not, be linked to other molecules and/or support materials.

Polynucleotides may comprise a native sequence (*i.e.*, an endogenous
10 sequence that encodes an ovarian carcinoma protein or a portion thereof) or may
5 comprise a variant of such a sequence. Polynucleotide variants may contain one or
more substitutions, additions, deletions and/or insertions such that the immunogenicity
of the encoded polypeptide is not diminished, relative to a native ovarian carcinoma
15 protein. The effect on the immunogenicity of the encoded polypeptide may generally
be assessed as described herein. Variants preferably exhibit at least about 70% identity,
10 more preferably at least about 80% identity and most preferably at least about 90%
identity to a polynucleotide sequence that encodes a native ovarian carcinoma protein or
20 a portion thereof.

The percent identity for two polynucleotide or polypeptide sequences
may be readily determined by comparing sequences using computer algorithms well
25 known to those of ordinary skill in the art, such as Megalign, using default parameters.
Comparisons between two sequences are typically performed by comparing the
sequences over a comparison window to identify and compare local regions of sequence
30 similarity. A "comparison window" as used herein, refers to a segment of at least about
20 contiguous positions, usually 30 to about 75, or 40 to about 50, in which a sequence
may be compared to a reference sequence of the same number of contiguous positions
after the two sequences are optimally aligned. Optimal alignment of sequences for
35 comparison may be conducted, for example, using the Megalign program in the
Lasergene suite of bioinformatics software (DNASTAR, Inc., Madison, WI), using
default parameters. Preferably, the percentage of sequence identity is determined by
40 25 comparing two optimally aligned sequences over a window of comparison of at least 20
positions, wherein the portion of the polynucleotide or polypeptide sequence in the
window may comprise additions or deletions (*i.e.*, gaps) of 20 % or less, usually 5 to 15
%, or 10 to 12%, relative to the reference sequence (which does not contain additions or
45 deletions). The percent identity may be calculated by determining the number of
30 positions at which the identical nucleic acid bases or amino acid residue occurs in both
sequences to yield the number of matched positions, dividing the number of matched

5 positions by the total number of positions in the reference sequence (*i.e.*, the window size) and multiplying the results by 100 to yield the percentage of sequence identity.

10 Variants may also, or alternatively, be substantially homologous to a native gene, or a portion or complement thereof. Such polynucleotide variants are
5 capable of hybridizing under moderately stringent conditions to a naturally occurring DNA sequence encoding a native ovarian carcinoma protein (or a complementary sequence). Suitable moderately stringent conditions include prewashing in a solution of
15 5 X SSC, 0.5% SDS, 1.0 mM EDTA (pH 8.0); hybridizing at 50°C-65°C, 5 X SSC, overnight; followed by washing twice at 65°C for 20 minutes with each of 2X, 0.5X and
10 0.2X SSC containing 0.1% SDS.

20 It will be appreciated by those of ordinary skill in the art that, as a result of the degeneracy of the genetic code, there are many nucleotide sequences that encode a polypeptide as described herein. Some of these polynucleotides bear minimal
homology to the nucleotide sequence of any native gene. Nonetheless, polynucleotides
25 that vary due to differences in codon usage are specifically contemplated by the present invention. Further, alleles of the genes comprising the polynucleotide sequences provided herein are within the scope of the present invention. Alleles are endogenous
30 genes that are altered as a result of one or more mutations, such as deletions, additions and/or substitutions of nucleotides. The resulting mRNA and protein may, but need
20 not, have an altered structure or function. Alleles may be identified using standard techniques (such as hybridization, amplification and/or database sequence comparison).

35 Polynucleotides may be prepared using any of a variety of techniques. For example, an ovarian carcinoma polynucleotide may be identified, as described in more detail below, by screening a late passage ovarian tumor expression library with
40 25 antisera generated against sera of immunocompetent mice after injection of such mice with sera from SCID mice implanted with late passage ovarian tumors. Ovarian carcinoma polynucleotides may also be identified using any of a variety of techniques designed to evaluate differential gene expression. Alternatively, polynucleotides may
45 be amplified from cDNA prepared from ovarian tumor cells. Such polynucleotides may
30 be amplified via polymerase chain reaction (PCR). For this approach, sequence-specific

5 primers may be designed based on the sequences provided herein, and may be purchased or synthesized.

10 An amplified portion may be used to isolate a full length gene from a suitable library (e.g., an ovarian carcinoma cDNA library) using well known techniques.

5 Within such techniques, a library (cDNA or genomic) is screened using one or more polynucleotide probes or primers suitable for amplification. Preferably, a library is size-selected to include larger molecules. Random primed libraries may also be preferred for identifying 5' and upstream regions of genes. Genomic libraries are preferred for obtaining introns and extending 5' sequences.

10 For hybridization techniques, a partial sequence may be labeled (e.g., by nick-translation or end-labeling with ³²P) using well known techniques. A bacterial or bacteriophage library is then screened by hybridizing filters containing denatured bacterial colonies (or lawns containing phage plaques) with the labeled probe (see Sambrook et al., *Molecular Cloning: A Laboratory Manual*, Cold Spring Harbor
20 Laboratories, Cold Spring Harbor, NY, 1989). Hybridizing colonies or plaques are selected and expanded, and the DNA is isolated for further analysis. cDNA clones may be analyzed to determine the amount of additional sequence by, for example, PCR using a primer from the partial sequence and a primer from the vector. Restriction maps and partial sequences may be generated to identify one or more overlapping clones. The
25 complete sequence may then be determined using standard techniques, which may involve generating a series of deletion clones. The resulting overlapping sequences are then assembled into a single contiguous sequence. A full length cDNA molecule can be generated by ligating suitable fragments, using well known techniques.

30 Alternatively, there are numerous amplification techniques for obtaining a full length coding sequence from a partial cDNA sequence. Within such techniques, amplification is generally performed via PCR. Any of a variety of commercially available kits may be used to perform the amplification step. Primers may be designed using, for example, software well known in the art. Primers are preferably 22-30
45 nucleotides in length, have a GC content of at least 50% and anneal to the target sequence at temperatures of about 68°C to 72°C. The amplified region may be
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5 sequenced as described above, and overlapping sequences assembled into a contiguous sequence.

One such amplification technique is inverse PCR (*see* Triglia et al., *Nucl. Acids Res.* 16:8186, 1988), which uses restriction enzymes to generate a fragment in the
10 known region of the gene. The fragment is then circularized by intramolecular ligation and used as a template for PCR with divergent primers derived from the known region. Within an alternative approach, sequences adjacent to a partial sequence may be
15 retrieved by amplification with a primer to a linker sequence and a primer specific to a known region. The amplified sequences are typically subjected to a second round of
20 amplification with the same linker primer and a second primer specific to the known region. A variation on this procedure, which employs two primers that initiate extension in opposite directions from the known sequence, is described in WO 96/38591. Additional techniques include capture PCR (Lagerstrom et al., *PCR Methods Applic.* 1:111-19, 1991) and walking PCR (Parker et al., *Nucl. Acids. Res.* 19:3055-60,
25 1991). Other methods employing amplification may also be employed to obtain a full length cDNA sequence.

In certain instances, it is possible to obtain a full length cDNA sequence
30 by analysis of sequences provided in an expressed sequence tag (EST) database, such as that available from GenBank. Searches for overlapping ESTs may generally be
20 performed using well known programs (*e.g.*, NCBI BLAST searches), and such ESTs may be used to generate a contiguous full length sequence.

35 Certain nucleic acid sequences of cDNA molecules encoding portions of ovarian carcinoma antigens are provided in Figures 1A-1S (SEQ ID NOS:1 to 71) and Figures 15A to 15EEE (SEQ ID NOS:82 to 310). The sequences provided in Figures
40 1A-1S appear to be novel. For sequences in Figures 15A-15EEE, database searches revealed matches having substantial identity. These polynucleotides were isolated by serological screening of an ovarian tumor cDNA expression library, using a technique designed to identify secreted tumor antigens. Briefly, a late passage ovarian tumor
45 expression library was prepared from a SCID-derived human ovarian tumor (OV9334)
30 in the vector λ -screen (Novagen). The sera used for screening were obtained by injecting immunocompetent mice with sera from SCID mice implanted with one late
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5 passage ovarian tumors. This technique permits the identification of cDNA molecules that encode immunogenic portions of secreted tumor antigens.

10 The polynucleotides recited herein, as well as full length polynucleotides comprising such sequences, other portions of such full length polynucleotides, and
5 sequences complementary to all or a portion of such full length molecules, are specifically encompassed by the present invention. It will be apparent to those of ordinary skill in the art that this technique can also be applied to the identification of
15 antigens that are secreted from other types of tumors.

Other nucleic acid sequences of cDNA molecules encoding portions of
10 ovarian carcinoma proteins are provided in Figures 4-9 (SEQ ID NOs:75-81), as well as SEQ ID NOs:313-384. These sequences were identified by screening a microarray of
20 cDNAs for tumor-associated expression (*i.e.*, expression that is at least five fold greater in an ovarian tumor than in normal ovarian tissue, as determined using a representative assay provided herein). Such screens were performed using a Synteni microarray (Palo
25 Alto, CA) according to the manufacturer's instructions (and essentially as described by Schena et al., *Proc. Natl. Acad. Sci. USA* 93:10614-10619, 1996 and Heller et al., *Proc. Natl. Acad. Sci. USA* 94:2150-2155, 1997). SEQ ID NOs:311 and 391 provide full
30 length sequences incorporating certain of these nucleic acid sequences.

Any of a variety of well known techniques may be used to evaluate
20 tumor-associated expression of a cDNA. For example, hybridization techniques using labeled polynucleotide probes may be employed. Alternatively, or in addition, amplification techniques such as real-time PCR may be used (*see* Gibson et al., *Genome Research* 6:995-1001, 1996; Heid et al., *Genome Research* 6:986-994, 1996). Real-time PCR is a technique that evaluates the level of PCR product accumulation during
35 amplification. This technique permits quantitative evaluation of mRNA levels in multiple samples. Briefly, mRNA is extracted from tumor and normal tissue and cDNA is prepared using standard techniques. Real-time PCR may be performed, for example, using a Perkin Elmer/Applied Biosystems (Foster City, CA) 7700 Prism instrument. Matching primers and fluorescent probes may be designed for genes of interest using,
40 for example, the primer express program provided by Perkin Elmer/Applied Biosystems (Foster City, CA). Optimal concentrations of primers and probes may be initially
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5 determined by those of ordinary skill in the art, and control (e.g., β -actin) primers and probes may be obtained commercially from, for example, Perkin Elmer/Applied Biosystems (Foster City, CA). To quantitate the amount of specific RNA in a sample, a
10 standard curve is generated alongside using a plasmid containing the gene of interest. Standard curves may be generated using the Ct values determined in the real-time PCR, which are related to the initial cDNA concentration used in the assay. Standard dilutions ranging from 10^{-1} to 10^{-6} copies of the gene of interest are generally sufficient. In
15 addition, a standard curve is generated for the control sequence. This permits standardization of initial RNA content of a tissue sample to the amount of control for
20 comparison purposes.

Polynucleotide variants may generally be prepared by any method known in the art, including chemical synthesis by, for example, solid phase phosphoramidite chemical synthesis. Modifications in a polynucleotide sequence may also be introduced using standard mutagenesis techniques, such as oligonucleotide-
25 directed site-specific mutagenesis (see Adelman et al., *DNA* 2:183, 1983). Alternatively, RNA molecules may be generated by *in vitro* or *in vivo* transcription of DNA sequences encoding an ovarian carcinoma antigen, or portion thereof, provided that the DNA is incorporated into a vector with a suitable RNA polymerase promoter (such as T7 or SP6). Certain portions may be used to prepare an encoded polypeptide,
30 as described herein. In addition, or alternatively, a portion may be administered to a patient such that the encoded polypeptide is generated *in vivo*.

A portion of a sequence complementary to a coding sequence (i.e., an antisense polynucleotide) may also be used as a probe or to modulate gene expression. cDNA constructs that can be transcribed into antisense RNA may also be introduced
40 into cells or tissues to facilitate the production of antisense RNA. An antisense polynucleotide may be used, as described herein, to inhibit expression of an ovarian carcinoma protein. Antisense technology can be used to control gene expression through triple-helix formation, which compromises the ability of the double helix to open sufficiently for the binding of polymerases, transcription factors or regulatory
45 molecules (see Gee et al., In Huber and Carr, *Molecular and Immunologic Approaches*, Futura Publishing Co. (Mt. Kisco, NY; 1994). Alternatively, an antisense molecule
50

5 may be designed to hybridize with a control region of a gene (*e.g.*, promoter, enhancer or transcription initiation site), and block transcription of the gene; or to block translation by inhibiting binding of a transcript to ribosomes.

10 Any polynucleotide may be further modified to increase stability *in vivo*.

5 Possible modifications include, but are not limited to, the addition of flanking sequences at the 5' and/or 3' ends; the use of phosphorothioate or 2' O-methyl rather than phosphodiesterase linkages in the backbone; and/or the inclusion of nontraditional bases such as inosine, queosine and wybutosine, as well as acetyl-, methyl-, thio- and other modified forms of adenine, cytidine, guanine, thymine and uridine.

10 Nucleotide sequences as described herein may be joined to a variety of other nucleotide sequences using established recombinant DNA techniques. For example, a polynucleotide may be cloned into any of a variety of cloning vectors, including plasmids, phagemids, lambda phage derivatives and cosmids. Vectors of particular interest include expression vectors, replication vectors, probe generation
20 vectors and sequencing vectors. In general, a vector will contain an origin of replication functional in at least one organism, convenient restriction endonuclease sites and one or more selectable markers. Other elements will depend upon the desired use, and will be apparent to those of ordinary skill in the art.

30 Within certain embodiments, polynucleotides may be formulated so as to permit entry into a cell of a mammal, and expression therein. Such formulations are particularly useful for therapeutic purposes, as described below. Those of ordinary skill in the art will appreciate that there are many ways to achieve expression of a polynucleotide in a target cell, and any suitable method may be employed. For example, a polynucleotide may be incorporated into a viral vector such as, but not
40 limited to, adenovirus, adeno-associated virus, retrovirus, or vaccinia or other pox virus (*e.g.*, avian pox virus). Techniques for incorporating DNA into such vectors are well known to those of ordinary skill in the art. A retroviral vector may additionally transfer or incorporate a gene for a selectable marker (to aid in the identification or selection of transduced cells) and/or a targeting moiety, such as a gene that encodes a ligand for a
45 receptor on a specific target cell, to render the vector target specific. Targeting may

5 also be accomplished using an antibody, by methods known to those of ordinary skill in the art.

10 Other formulations for therapeutic purposes include colloidal dispersion systems, such as macromolecule complexes, nanocapsules, microspheres, beads, and
5 lipid-based systems including oil-in-water emulsions, micelles, mixed micelles, and liposomes. A preferred colloidal system for use as a delivery vehicle *in vitro* and *in vivo* is a liposome (*i.e.*, an artificial membrane vesicle). The preparation and use of
15 such systems is well known in the art.

10 OVARIAN CARCINOMA POLYPEPTIDES

20 Within the context of the present invention, polypeptides may comprise at least an immunogenic portion of an ovarian carcinoma protein or a variant thereof, as described herein. As noted above, certain ovarian carcinoma proteins are ovarian carcinoma antigens that are expressed by ovarian tumor cells and react detectably
25 within an immunoassay (such as an ELISA) with antisera generated against serum from an immunodeficient animal implanted with an ovarian tumor. Other ovarian carcinoma proteins are encoded by ovarian carcinoma polynucleotides recited herein. Polypeptides as described herein may be of any length. Additional sequences derived from the native protein and/or heterologous sequences may be present, and such sequences may (but
30 need not) possess further immunogenic or antigenic properties.

35 An "immunogenic portion," as used herein is a portion of an antigen that is recognized (*i.e.*, specifically bound) by a B-cell and/or T-cell surface antigen receptor. Such immunogenic portions generally comprise at least 5 amino acid residues, more preferably at least 10, and still more preferably at least 20 amino acid
40 residues of an ovarian carcinoma protein or a variant thereof. Preferred immunogenic portions are encoded by cDNA molecules isolated as described herein. Further immunogenic portions may generally be identified using well known techniques, such as those summarized in Paul, *Fundamental Immunology*, 3rd ed., 243-247 (Raven Press,
45 1993) and references cited therein. Such techniques include screening polypeptides for the ability to react with ovarian carcinoma protein-specific antibodies, antisera and/or
30 T-cell lines or clones. As used herein, antisera and antibodies are "ovarian carcinoma

5 protein-specific" if they specifically bind to an ovarian carcinoma protein (*i.e.*, they
react with the ovarian carcinoma protein in an ELISA or other immunoassay, and do not
10 react detectably with unrelated proteins). Such antisera, antibodies and T cells may be
prepared as described herein, and using well known techniques. An immunogenic
5 portion of a native ovarian carcinoma protein is a portion that reacts with such antisera,
antibodies and/or T-cells at a level that is not substantially less than the reactivity of the
full length polypeptide (*e.g.*, in an ELISA and/or T-cell reactivity assay). Such
15 immunogenic portions may react within such assays at a level that is similar to or
greater than the reactivity of the full length protein. Such screens may generally be
10 performed using methods well known to those of ordinary skill in the art, such as those
described in Harlow and Lane, *Antibodies: A Laboratory Manual*, Cold Spring Harbor
20 Laboratory, 1988. For example, a polypeptide may be immobilized on a solid support
and contacted with patient sera to allow binding of antibodies within the sera to the
immobilized polypeptide. Unbound sera may then be removed and bound antibodies
25 detected using, for example, ¹²⁵I-labeled Protein A.

As noted above, a composition may comprise a variant of a native
ovarian carcinoma protein. A polypeptide "variant," as used herein, is a polypeptide
30 that differs from a native ovarian carcinoma protein in one or more substitutions,
deletions, additions and/or insertions, such that the immunogenicity of the polypeptide
20 is not substantially diminished. In other words, the ability of a variant to react with
ovarian carcinoma protein-specific antisera may be enhanced or unchanged, relative to
35 the native ovarian carcinoma protein, or may be diminished by less than 50%, and
preferably less than 20%, relative to the native ovarian carcinoma protein. Such
variants may generally be identified by modifying one of the above polypeptide
40 25 sequences and evaluating the reactivity of the modified polypeptide with ovarian
carcinoma protein-specific antibodies or antisera as described herein. Preferred variants
include those in which one or more portions, such as an N-terminal leader sequence or
transmembrane domain, have been removed. Other preferred variants include variants
45 in which a small portion (*e.g.*, 1-30 amino acids, preferably 5-15 amino acids) has been
30 removed from the N- and/or C-terminal of the mature protein.

5 Polypeptide variants preferably exhibit at least about 70%, more preferably at least about 90% and most preferably at least about 95% identity to the native polypeptide. Preferably, a variant contains conservative substitutions. A
10 "conservative substitution" is one in which an amino acid is substituted for another amino acid that has similar properties, such that one skilled in the art of peptide
15 chemistry would expect the secondary structure and hydrophobic nature of the polypeptide to be substantially unchanged. Amino acid substitutions may generally be made on the basis of similarity in polarity, charge, solubility, hydrophobicity,
20 hydrophilicity and/or the amphipathic nature of the residues. For example, negatively charged amino acids include aspartic acid and glutamic acid; positively charged amino acids include lysine and arginine; and amino acids with uncharged polar head groups having similar hydrophilicity values include leucine, isoleucine and valine; glycine and alanine; asparagine and glutamine; and serine, threonine, phenylalanine and tyrosine. Other groups of amino acids that may represent conservative changes include: (1) ala,
25 pro, gly, glu, asp, gln, asp, ser, thr; (2) cys, ser, tyr, thr; (3) val, ile, leu, met, ala, phe; (4) lys, arg, his; and (5) phe, tyr, trp, his. A variant may also, or alternatively, contain nonconservative changes. Variants may also (or alternatively) be modified by, for example, the deletion or addition of amino acids that have minimal influence on the immunogenicity, secondary structure and hydrophobic nature of the polypeptide.

20 As noted above, polypeptides may comprise a signal (or leader) sequence at the N-terminal end of the protein which co-translationally or post-translationally directs transfer of the protein. The polypeptide may also be conjugated to a linker or other sequence for ease of synthesis, purification or identification of the polypeptide (*e.g.*, poly-His), or to enhance binding of the polypeptide to a solid support.
35 For example, a polypeptide may be conjugated to an immunoglobulin Fc region.

40 Polypeptides may be prepared using any of a variety of well known techniques. Recombinant polypeptides encoded by DNA sequences as described above may be readily prepared from the DNA sequences using any of a variety of expression vectors known to those of ordinary skill in the art. Expression may be achieved in any
45 appropriate host cell that has been transformed or transfected with an expression vector containing a DNA molecule that encodes a recombinant polypeptide. Suitable host
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5 cells include prokaryotes, yeast and higher eukaryotic cells. Preferably, the host cells employed are *E. coli*, yeast or a mammalian cell line such as COS or CHO. Supernatants from suitable host/vector systems which secrete recombinant protein or polypeptide into culture media may be first concentrated using a commercially available
10 filter. Following concentration, the concentrate may be applied to a suitable purification matrix such as an affinity matrix or an ion exchange resin. Finally, one or more reverse phase HPLC steps can be employed to further purify a recombinant polypeptide.
15

Portions and other variants having fewer than about 100 amino acids, and generally fewer than about 50 amino acids, may also be generated by synthetic
10 means, using techniques well known to those of ordinary skill in the art. For example, such polypeptides may be synthesized using any of the commercially available solid-phase techniques, such as the Merrifield solid-phase synthesis method, where amino acids are sequentially added to a growing amino acid chain. See Merrifield, *J. Am.*
20 *Chem. Soc.* 85:2149-2146, 1963. Equipment for automated synthesis of polypeptides is commercially available from suppliers such as Applied BioSystems, Inc. (Foster City, CA), and may be operated according to the manufacturer's instructions.
25

Within certain specific embodiments, a polypeptide may be a fusion protein that comprises multiple polypeptides as described herein, or that comprises one
20 polypeptide as described herein and a known tumor antigen, such as an ovarian carcinoma protein or a variant of such a protein. A fusion partner may, for example, assist in providing T-helper epitopes (an immunological fusion partner), preferably T helper epitopes recognized by humans, or may assist in expressing the protein (an expression enhancer) at higher yields than the native recombinant protein. Certain
35 preferred fusion partners are both immunological and expression enhancing fusion partners. Other fusion partners may be selected so as to increase the solubility of the protein or to enable the protein to be targeted to desired intracellular compartments. Still further fusion partners include affinity tags, which facilitate purification of the protein.
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30 Fusion proteins may generally be prepared using standard techniques, including chemical conjugation. Preferably, a fusion protein is expressed as a
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5 recombinant protein, allowing the production of increased levels, relative to a non-fused protein, in an expression system. Briefly, DNA sequences encoding the polypeptide components may be assembled separately, and ligated into an appropriate expression
10 vector. The 3' end of the DNA sequence encoding one polypeptide component is ligated, with or without a peptide linker, to the 5' end of a DNA sequence encoding the
15 second polypeptide component so that the reading frames of the sequences are in phase. This permits translation into a single fusion protein that retains the biological activity of both component polypeptides.

A peptide linker sequence may be employed to separate the first and the
10 second polypeptide components by a distance sufficient to ensure that each polypeptide folds into its secondary and tertiary structures. Such a peptide linker sequence is incorporated into the fusion protein using standard techniques well known in the art. Suitable peptide linker sequences may be chosen based on the following factors:
20 (1) their ability to adopt a flexible extended conformation; (2) their inability to adopt a secondary structure that could interact with functional epitopes on the first and second
25 polypeptides; and (3) the lack of hydrophobic or charged residues that might react with the polypeptide functional epitopes. Preferred peptide linker sequences contain Gly, Asn and Ser residues. Other near neutral amino acids, such as Thr and Ala may also be used in the linker sequence. Amino acid sequences which may be usefully employed as
30 linkers include those disclosed in Maratea et al., *Gene* 40:39-46, 1985; Murphy et al., *Proc. Natl. Acad. Sci. USA* 83:8258-8262, 1986; U.S. Patent No. 4,935,233 and U.S. Patent No. 4,751,180. The linker sequence may generally be from 1 to about 50 amino acids in length. Linker sequences are not required when the first and second polypeptides have non-essential N-terminal amino acid regions that can be used to
35 separate the functional domains and prevent steric interference.

The ligated DNA sequences are operably linked to suitable transcriptional or translational regulatory elements. The regulatory elements responsible for expression of DNA are located only 5' to the DNA sequence encoding the first polypeptides. Similarly, stop codons required to end translation and
40 transcription termination signals are only present 3' to the DNA sequence encoding the second polypeptide.

5 Fusion proteins are also provided that comprise a polypeptide of the present invention together with an unrelated immunogenic protein. Preferably the immunogenic protein is capable of eliciting a recall response. Examples of such proteins include tetanus, tuberculosis and hepatitis proteins (*see, for example, Stoute*
10 *et al. New Engl. J. Med.*, 336:86-91, 1997).

Within preferred embodiments, an immunological fusion partner is derived from protein D, a surface protein of the gram-negative bacterium *Haemophilus influenza B* (WO 91/18926). Preferably, a protein D derivative comprises approximately the first third of the protein (*e.g.*, the first N-terminal 100-110 amino
15 acids), and a protein D derivative may be lipidated. Within certain preferred embodiments, the first 109 residues of a Lipoprotein D fusion partner is included on the N-terminus to provide the polypeptide with additional exogenous T-cell epitopes and to increase the expression level in *E. coli* (thus functioning as an expression enhancer). The lipid tail ensures optimal presentation of the antigen to antigen present cells. Other
20 fusion partners include the non-structural protein from influenzae virus, NS1 (hemagglutinin). Typically, the N-terminal 81 amino acids are used, although different fragments that include T-helper epitopes may be used.

In another embodiment, the immunological fusion partner is the protein known as LYTA, or a portion thereof (preferably a C-terminal portion). LYTA is
25 derived from *Streptococcus pneumoniae*, which synthesizes an N-acetyl-L-alanine amidase known as amidase LYTA (encoded by the *LytA* gene: *Gene* 43:265-292, 1986). LYTA is an autolysin that specifically degrades certain bonds in the peptidoglycan backbone. The C-terminal domain of the LYTA protein is responsible for the affinity to the choline or to some choline analogues such as DEAE. This
30 property has been exploited for the development of *E. coli* C-LYTA expressing plasmids useful for expression of fusion proteins. Purification of hybrid proteins containing the C-LYTA fragment at the amino terminus has been described (*see Biotechnology* 10:795-798, 1992). Within a preferred embodiment, a repeat portion of LYTA may be incorporated into a fusion protein. A repeat portion is found in the C-
35 terminal region starting at residue 178. A particularly preferred repeat portion incorporates residues 188-305.

5 In general, polypeptides (including fusion proteins) and polynucleotides
as described herein are isolated. An "isolated" polypeptide or polynucleotide is one that
is removed from its original environment. For example, a naturally-occurring protein is
10 isolated if it is separated from some or all of the coexisting materials in the natural
system. Preferably, such polypeptides are at least about 90% pure, more preferably at
least about 95% pure and most preferably at least about 99% pure. A polynucleotide is
15 considered to be isolated if, for example, it is cloned into a vector that is not a part of
the natural environment.

10 BINDING AGENTS

20 The present invention further provides agents, such as antibodies and
antigen-binding fragments thereof, that specifically bind to an ovarian carcinoma
protein. As used herein, an antibody, or antigen-binding fragment thereof, is said to
"specifically bind" to an ovarian carcinoma protein if it reacts at a detectable level
25 (within, for example, an ELISA) with an ovarian carcinoma protein, and does not react
detectably with unrelated proteins under similar conditions. As used herein, "binding"
refers to a noncovalent association between two separate molecules such that a
"complex" is formed. The ability to bind may be evaluated by, for example,
30 determining a binding constant for the formation of the complex. The binding constant
20 is the value obtained when the concentration of the complex is divided by the product of
the component concentrations. In general, two compounds are said to "bind," in the
context of the present invention, when the binding constant for complex formation
35 exceeds about 10^3 L/mol. The binding constant may be determined using methods well
known in the art.

40 25 Binding agents may be further capable of differentiating between
patients with and without a cancer, such as ovarian cancer, using the representative
assays provided herein. In other words, antibodies or other binding agents that bind to a
ovarian carcinoma antigen will generate a signal indicating the presence of a cancer in
45 at least about 20% of patients with the disease, and will generate a negative signal
30 indicating the absence of the disease in at least about 90% of individuals without the
cancer. To determine whether a binding agent satisfies this requirement, biological

5 samples (e.g., blood, sera, leukophoresis, urine and/or tumor biopsies) from patients with and without a cancer (as determined using standard clinical tests) may be assayed as described herein for the presence of polypeptides that bind to the binding agent. It
10 will be apparent that a statistically significant number of samples with and without the disease should be assayed. Each binding agent should satisfy the above criteria; however, those of ordinary skill in the art will recognize that binding agents may be used in combination to improve sensitivity.

15 Any agent that satisfies the above requirements may be a binding agent. For example, a binding agent may be a ribosome, with or without a peptide component, an RNA molecule or a polypeptide. In a preferred embodiment, a binding agent is an
20 antibody or an antigen-binding fragment thereof. Antibodies may be prepared by any of a variety of techniques known to those of ordinary skill in the art. See, e.g., Harlow and Lane, *Antibodies: A Laboratory Manual*, Cold Spring Harbor Laboratory, 1988. In general, antibodies can be produced by cell culture techniques, including the generation
25 of monoclonal antibodies as described herein, or via transfection of antibody genes into suitable bacterial or mammalian cell hosts, in order to allow for the production of recombinant antibodies. In one technique, an immunogen comprising the polypeptide is initially injected into any of a wide variety of mammals (e.g., mice, rats, rabbits, sheep
30 or goats). In this step, the polypeptides of this invention may serve as the immunogen without modification. Alternatively, particularly for relatively short polypeptides, a superior immune response may be elicited if the polypeptide is joined to a carrier protein, such as bovine serum albumin or keyhole limpet hemocyanin. The immunogen is injected into the animal host, preferably according to a predetermined schedule incorporating one or more booster immunizations, and the animals are bled periodically.
35 Polyclonal antibodies specific for the polypeptide may then be purified from such antisera by, for example, affinity chromatography using the polypeptide coupled to a suitable solid support.

45 Monoclonal antibodies specific for an antigenic polypeptide of interest may be prepared, for example, using the technique of Kohler and Milstein, *Eur. J. Immunol.* 6:511-519, 1976, and improvements thereto. Briefly, these methods involve
30 the preparation of immortal cell lines capable of producing antibodies having the

5 desired specificity (*i.e.*, reactivity with the polypeptide of interest). Such cell lines may be produced, for example, from spleen cells obtained from an animal immunized as described above. The spleen cells are then immortalized by, for example, fusion with a
10 myeloma cell fusion partner, preferably one that is syngeneic with the immunized animal. A variety of fusion techniques may be employed. For example, the spleen cells and myeloma cells may be combined with a nonionic detergent for a few minutes and then plated at low density on a selective medium that supports the growth of hybrid
15 cells, but not myeloma cells. A preferred selection technique uses HAT (hypoxanthine, aminopterin, thymidine) selection. After a sufficient time, usually about 1 to 2 weeks, colonies of hybrids are observed. Single colonies are selected and their culture supernatants tested for binding activity against the polypeptide. Hybridomas having
20 high reactivity and specificity are preferred.

Monoclonal antibodies may be isolated from the supernatants of growing hybridoma colonies. In addition, various techniques may be employed to enhance the
25 yield, such as injection of the hybridoma cell line into the peritoneal cavity of a suitable vertebrate host, such as a mouse. Monoclonal antibodies may then be harvested from the ascites fluid or the blood. Contaminants may be removed from the antibodies by conventional techniques, such as chromatography, gel filtration, precipitation, and extraction. The polypeptides of this invention may be used in the purification process
30 in, for example, an affinity chromatography step.

Within certain embodiments, the use of antigen-binding fragments of
35 antibodies may be preferred. Such fragments include Fab fragments, which may be prepared using standard techniques. Briefly, immunoglobulins may be purified from rabbit serum by affinity chromatography on Protein A bead columns (Harlow and Lane, 1988) and digested by papain to yield Fab and Fc fragments. The Fab and Fc fragments may be separated by affinity chromatography on protein A bead columns.
40

Monoclonal antibodies of the present invention may be coupled to one or
45 more therapeutic agents. Suitable agents in this regard include radionuclides, differentiation inducers, drugs, toxins, and derivatives thereof. Preferred radionuclides include ^{90}Y , ^{123}I , ^{125}I , ^{131}I , ^{186}Re , ^{188}Re , ^{211}At , and ^{212}Bi . Preferred drugs include
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methotrexate, and pyrimidine and purine analogs. Preferred differentiation inducers include phorbol esters and butyric acid. Preferred toxins include ricin, abrin, diphtheria toxin, cholera toxin, gelonin, Pseudomonas exotoxin, Shigella toxin, and pokeweed antiviral protein.

A therapeutic agent may be coupled (*e.g.*, covalently bonded) to a suitable monoclonal antibody either directly or indirectly (*e.g.*, via a linker group). A direct reaction between an agent and an antibody is possible when each possesses a substituent capable of reacting with the other. For example, a nucleophilic group, such as an amino or sulfhydryl group, on one may be capable of reacting with a carbonyl-containing group, such as an anhydride or an acid halide, or with an alkyl group containing a good leaving group (*e.g.*, a halide) on the other.

Alternatively, it may be desirable to couple a therapeutic agent and an antibody via a linker group. A linker group can function as a spacer to distance an antibody from an agent in order to avoid interference with binding capabilities. A linker group can also serve to increase the chemical reactivity of a substituent on an agent or an antibody, and thus increase the coupling efficiency. An increase in chemical reactivity may also facilitate the use of agents, or functional groups on agents, which otherwise would not be possible.

It will be evident to those skilled in the art that a variety of bifunctional or polyfunctional reagents, both homo- and hetero-functional (such as those described in the catalog of the Pierce Chemical Co., Rockford, IL), may be employed as the linker group. Coupling may be effected, for example, through amino groups, carboxyl groups, sulfhydryl groups or oxidized carbohydrate residues. There are numerous references describing such methodology, *e.g.*, U.S. Patent No. 4,671,958, to Rodwell et al.

Where a therapeutic agent is more potent when free from the antibody portion of the immunoconjugates of the present invention, it may be desirable to use a linker group which is cleavable during or upon internalization into a cell. A number of different cleavable linker groups have been described. The mechanisms for the intracellular release of an agent from these linker groups include cleavage by reduction of a disulfide bond (*e.g.*, U.S. Patent No. 4,489,710, to Spitler), by irradiation of a photolabile bond (*e.g.*, U.S. Patent No. 4,625,014, to Senter et al.), by hydrolysis of

5 derivatized amino acid side chains (*e.g.*, U.S. Patent No. 4,638,045, to Kohn et al.), by serum complement-mediated hydrolysis (*e.g.*, U.S. Patent No. 4,671,958, to Rodwell et al.), and acid-catalyzed hydrolysis (*e.g.*, U.S. Patent No. 4,569,789, to Blattler et al.).

10 It may be desirable to couple more than one agent to an antibody. In one embodiment, multiple molecules of an agent are coupled to one antibody molecule. In another embodiment, more than one type of agent may be coupled to one antibody. Regardless of the particular embodiment, immunoconjugates with more than one agent
15 may be prepared in a variety of ways. For example, more than one agent may be coupled directly to an antibody molecule, or linkers which provide multiple sites for attachment can be used. Alternatively, a carrier can be used.

20 A carrier may bear the agents in a variety of ways, including covalent bonding either directly or via a linker group. Suitable carriers include proteins such as albumins (*e.g.*, U.S. Patent No. 4,507,234, to Kato et al.), peptides and polysaccharides such as aminodextran (*e.g.*, U.S. Patent No. 4,699,784, to Shih et al.). A carrier may
25 also bear an agent by noncovalent bonding or by encapsulation, such as within a liposome vesicle (*e.g.*, U.S. Patent Nos. 4,429,008 and 4,873,088). Carriers specific for radionuclide agents include radiohalogenated small molecules and chelating compounds. For example, U.S. Patent No. 4,735,792 discloses representative
30 radiohalogenated small molecules and their synthesis. A radionuclide chelate may be formed from chelating compounds that include those containing nitrogen and sulfur atoms as the donor atoms for binding the metal, or metal oxide, radionuclide. For
35 example, U.S. Patent No. 4,673,562, to Davison et al. discloses representative chelating compounds and their synthesis.

40 A variety of routes of administration for the antibodies and immunoconjugates may be used. Typically, administration will be intravenous, intramuscular, subcutaneous or in the bed of a resected tumor. It will be evident that the precise dose of the antibody/immunoconjugate will vary depending upon the antibody
45 used, the antigen density on the tumor, and the rate of clearance of the antibody.

50 Also provided herein are anti-idiotypic antibodies that mimic an immunogenic portion of an ovarian carcinoma protein. Such antibodies may be raised
55 against an antibody, or antigen-binding fragment thereof, that specifically binds to an

immunogenic portion of an ovarian carcinoma protein, using well known techniques. Anti-idiotypic antibodies that mimic an immunogenic portion of an ovarian carcinoma protein are those antibodies that bind to an antibody, or antigen-binding fragment thereof, that specifically binds to an immunogenic portion of an ovarian carcinoma protein, as described herein.

T CELLS

Immunotherapeutic compositions may also, or alternatively, comprise T cells specific for an ovarian carcinoma protein. Such cells may generally be prepared *in vitro* or *ex vivo*, using standard procedures. For example, T cells may be present within (or isolated from) bone marrow, peripheral blood or a fraction of bone marrow or peripheral blood of a mammal, such as a patient, using a commercially available cell separation system, such as the CEPRATE™ system, available from CellPro Inc., Bothell WA (see also U.S. Patent No. 5,240,856; U.S. Patent No. 5,215,926; WO 89/06280; WO 91/16116 and WO 92/07243). Alternatively, T cells may be derived from related or unrelated humans, non-human animals, cell lines or cultures.

T cells may be stimulated with an ovarian carcinoma polypeptide, polynucleotide encoding an ovarian carcinoma polypeptide and/or an antigen presenting cell (APC) that expresses such a polypeptide. Such stimulation is performed under conditions and for a time sufficient to permit the generation of T cells that are specific for the polypeptide. Preferably, an ovarian carcinoma polypeptide or polynucleotide is present within a delivery vehicle, such as a microsphere, to facilitate the generation of specific T cells.

T cells are considered to be specific for an ovarian carcinoma polypeptide if the T cells kill target cells coated with an ovarian carcinoma polypeptide or expressing a gene encoding such a polypeptide. T cell specificity may be evaluated using any of a variety of standard techniques. For example, within a chromium release assay or proliferation assay, a stimulation index of more than two fold increase in lysis and/or proliferation, compared to negative controls, indicates T cell specificity. Such assays may be performed, for example, as described in Chen et al., *Cancer Res.* 54:1065-1070, 1994. Alternatively, detection of the proliferation of T cells may be

5 accomplished by a variety of known techniques. For example, T cell proliferation can be detected by measuring an increased rate of DNA synthesis (e.g., by pulse-labeling cultures of T cells with tritiated thymidine and measuring the amount of tritiated
10 thymidine incorporated into DNA). Contact with an ovarian carcinoma polypeptide (200 ng/ml - 100 µg/ml, preferably 100 ng/ml - 25 µg/ml) for 3 - 7 days should result in at least a two fold increase in proliferation of the T cells and/or contact as described above for 2-3 hours should result in activation of the T cells, as measured using
15 standard cytokine assays in which a two fold increase in the level of cytokine release (e.g., TNF or IFN-γ) is indicative of T cell activation (see Coligan et al., Current Protocols in Immunology, vol. 1, Wiley Interscience (Greene 1998). T cells that have been activated in response to an ovarian carcinoma polypeptide, polynucleotide or ovarian carcinoma polypeptide-expressing APC may be CD4⁺ and/or CD8⁺. Ovarian carcinoma polypeptide-specific T cells may be expanded using standard techniques. Within preferred embodiments, the T cells are derived from a patient or a related or
20 unrelated donor and are administered to the patient following stimulation and expansion.

For therapeutic purposes, CD4⁺ or CD8⁺ T cells that proliferate in response to an ovarian carcinoma polypeptide, polynucleotide or APC can be expanded in number either *in vitro* or *in vivo*. Proliferation of such T cells *in vitro* may be
30 accomplished in a variety of ways. For example, the T cells can be re-exposed to an ovarian carcinoma polypeptide, with or without the addition of T cell growth factors, such as interleukin-2, and/or stimulator cells that synthesize an ovarian carcinoma polypeptide. Alternatively, one or more T cells that proliferate in the presence of an ovarian carcinoma polypeptide can be expanded in number by cloning. Methods for
35 cloning cells are well known in the art, and include limiting dilution. Following expansion, the cells may be administered back to the patient as described, for example, by Chang et al., *Crit. Rev. Oncol. Hematol.* 22:213, 1996.

45 PHARMACEUTICAL COMPOSITIONS AND VACCINES

30 Within certain aspects, polypeptides, polynucleotides, binding agents and/or immune system cells as described herein may be incorporated into

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5 pharmaceutical compositions or vaccines. Pharmaceutical compositions comprise one or more such compounds or cells and a physiologically acceptable carrier. Vaccines may comprise one or more such compounds or cells and a non-specific immune response enhancer. A non-specific immune response enhancer may be any substance
10 that enhances an immune response to an exogenous antigen. Examples of non-specific immune response enhancers include adjuvants, biodegradable microspheres (*e.g.*, polylactic galactide) and liposomes (into which the compound is incorporated; *see e.g.*, Fullerton, U.S. Patent No. 4,235,877). Vaccine preparation is generally described in, for example, M.F. Powell and M.J. Newman, eds., "Vaccine Design (the subunit and
15 adjuvant approach)," Plenum Press (NY, 1995). Pharmaceutical compositions and vaccines within the scope of the present invention may also contain other compounds, which may be biologically active or inactive. For example, one or more immunogenic portions of other tumor antigens may be present, either incorporated into a fusion polypeptide or as a separate compound within the composition or vaccine.

25 A pharmaceutical composition or vaccine may contain DNA encoding one or more of the polypeptides as described above, such that the polypeptide is generated *in situ*. As noted above, the DNA may be present within any of a variety of delivery systems known to those of ordinary skill in the art, including nucleic acid expression systems, bacteria and viral expression systems. Appropriate nucleic acid
30 expression systems contain the necessary DNA sequences for expression in the patient (such as a suitable promoter and terminating signal). Bacterial delivery systems involve the administration of a bacterium (such as *Bacillus-Calmette-Guerrin*) that expresses an immunogenic portion of the polypeptide on its cell surface. In a preferred embodiment, the DNA may be introduced using a viral expression system (*e.g.*, vaccinia or other pox
40 virus, retrovirus, or adenovirus), which may involve the use of a non-pathogenic (defective), replication competent virus. Suitable systems are disclosed, for example, in Fisher-Hoch et al., *PNAS* 86:317-321, 1989; Flexner et al., *Ann. N.Y. Acad. Sci.* 569:86-103, 1989; Flexner et al., *Vaccine* 8:17-21, 1990; U.S. Patent Nos. 4,603,112, 4,769,330, and 5,017,487; WO 89/01973; U.S. Patent No. 4,777,127; GB 2,200,651;
45 EP 0,345,242; WO 91/02805; Berkner, *Biotechniques* 6:616-627, 1988; Rosenfeld et al., *Science* 252:431-434, 1991; Kolls et al., *PNAS* 91:215-219, 1994; Kass-Eisler et al.,
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5 *PNAS* 90:11498-11502, 1993; Guzman et al., *Circulation* 88:2838-2848, 1993; and
Guzman et al., *Cir. Res.* 73:1202-1207, 1993. Techniques for incorporating DNA into
such expression systems are well known to those of ordinary skill in the art. The DNA
10 may also be "naked," as described, for example, in Ulmer et al., *Science* 259:1745-1749,
5 1993 and reviewed by Cohen, *Science* 259:1691-1692, 1993. The uptake of naked
DNA may be increased by coating the DNA onto biodegradable beads, which are
efficiently transported into the cells.

15 While any suitable carrier known to those of ordinary skill in the art may
be employed in the pharmaceutical compositions of this invention, the type of carrier
10 will vary depending on the mode of administration. Compositions of the present
invention may be formulated for any appropriate manner of administration, including
20 for example, topical, oral, nasal, intravenous, intracranial, intraperitoneal, subcutaneous
or intramuscular administration. For parenteral administration, such as subcutaneous
injection, the carrier preferably comprises water, saline, alcohol, a fat, a wax or a buffer.
25 For oral administration, any of the above carriers or a solid carrier, such as mannitol,
lactose, starch, magnesium stearate, sodium saccharine, talcum, cellulose, glucose,
sucrose, and magnesium carbonate, may be employed. Biodegradable microspheres
30 (*e.g.*, polylactate polyglycolate) may also be employed as carriers for the
pharmaceutical compositions of this invention. Suitable biodegradable microspheres
20 are disclosed, for example, in U.S. Patent Nos. 4,897,268 and 5,075,109.

35 Such compositions may also comprise buffers (*e.g.*, neutral buffered
saline or phosphate buffered saline), carbohydrates (*e.g.*, glucose, mannose, sucrose or
dextrans), mannitol, proteins, polypeptides or amino acids such as glycine, antioxidants,
chelating agents such as EDTA or glutathione, adjuvants (*e.g.*, aluminum hydroxide)
40 25 and/or preservatives. Alternatively, compositions of the present invention may be
formulated as a lyophilizate. Compounds may also be encapsulated within liposomes
using well known technology.

45 Any of a variety of non-specific immune response enhancers may be
employed in the vaccines of this invention. For example, an adjuvant may be included.
30 Most adjuvants contain a substance designed to protect the antigen from rapid
catabolism, such as aluminum hydroxide or mineral oil, and a stimulator of immune
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5 responses, such as lipid A, *Bordetella pertussis* or *Mycobacterium tuberculosis* derived proteins. Suitable adjuvants are commercially available as, for example, Freund's Incomplete Adjuvant and Complete Adjuvant (Difco Laboratories, Detroit, MI), Merck Adjuvant 65 (Merck and Company, Inc., Rahway, NJ), alum, biodegradable
10 microspheres, monophosphoryl lipid A and quil A. Cytokines, such as GM-CSF or interleukin-2, -7, or -12, may also be used as adjuvants.

15 Within the vaccines provided herein, the adjuvant composition is preferably designed to induce an immune response predominantly of the Th1 type. High levels of Th1-type cytokines (e.g., IFN- γ , IL-2 and IL-12) tend to favor the
20 induction of cell mediated immune responses to an administered antigen. In contrast, high levels of Th2-type cytokines (e.g., IL-4, IL-5, IL-6, IL-10 and TNF- β) tend to favor the induction of humoral immune responses. Following application of a vaccine as provided herein, a patient will support an immune response that includes Th1- and Th2-type responses. Within a preferred embodiment, in which a response is
25 predominantly Th1-type, the level of Th1-type cytokines will increase to a greater extent than the level of Th2-type cytokines. The levels of these cytokines may be readily assessed using standard assays. For a review of the families of cytokines, see
30 Mosmann and Coffman, *Ann. Rev. Immunol.* 7:145-173, 1989.

Preferred adjuvants for use in eliciting a predominantly Th1-type
20 response include, for example, a combination of monophosphoryl lipid A, preferably 3-de-O-acylated monophosphoryl lipid A (3D-MPL), together with an aluminum salt. MPL adjuvants are available from Ribi ImmunoChem Research Inc. (Hamilton, MT; see US Patent Nos. 4,436,727; 4,877,611; 4,866,034 and 4,912,094). Also preferred is AS-2 (SmithKline Beecham). CpG-containing oligonucleotides (in which the CpG
35 dinucleotide is unmethylated) also induce a predominantly Th1 response. Such oligonucleotides are well known and are described, for example, in WO 96/02555. Another preferred adjuvant is a saponin, preferably QS21, which may be used alone or in combination with other adjuvants. For example, an enhanced system involves the
45 combination of a monophosphoryl lipid A and saponin derivative, such as the combination of QS21 and 3D-MPL as described in WO 94/00153, or a less reactogenic composition where the QS21 is quenched with cholesterol, as described in WO
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5 96/33739. Other preferred formulations comprises an oil-in-water emulsion and tocopherol. A particularly potent adjuvant formulation involving QS21, 3D-MPL and tocopherol in an oil-in-water emulsion is described in WO 95/17210. Any vaccine
10 provided herein may be prepared using well known methods that result in a combination of antigen, immune response enhancer and a suitable carrier or excipient.

The compositions described herein may be administered as part of a sustained release formulation (*i.e.*, a formulation such as a capsule or sponge that effects
15 a slow release of compound following administration). Such formulations may generally be prepared using well known technology and administered by, for example, oral, rectal or subcutaneous implantation, or by implantation at the desired target site.
20 Sustained-release formulations may contain a polypeptide, polynucleotide or antibody dispersed in a carrier matrix and/or contained within a reservoir surrounded by a rate controlling membrane. Carriers for use within such formulations are biocompatible, and may also be biodegradable; preferably the formulation provides a relatively
25 constant level of active component release. The amount of active compound contained within a sustained release formulation depends upon the site of implantation, the rate and expected duration of release and the nature of the condition to be treated or prevented.

Any of a variety of delivery vehicles may be employed within
20 pharmaceutical compositions and vaccines to facilitate production of an antigen-specific immune response that targets tumor cells. Delivery vehicles include antigen presenting cells (APCs), such as dendritic cells, macrophages, B cells, monocytes and other cells
35 that may be engineered to be efficient APCs. Such cells may, but need not, be genetically modified to increase the capacity for presenting the antigen, to improve activation and/or maintenance of the T cell response, to have anti-tumor effects *per se*
40 and/or to be immunologically compatible with the receiver (*i.e.*, matched HLA haplotype). APCs may generally be isolated from any of a variety of biological fluids and organs, including tumor and peritumoral tissues, and may be autologous, allogeneic, syngeneic or xenogeneic cells.

30 Certain preferred embodiments of the present invention use dendritic cells or progenitors thereof as antigen-presenting cells. Dendritic cells are highly potent

5 APCs (Banchereau and Steinman, *Nature* 392:245-251, 1998) and have been shown to be effective as a physiological adjuvant for eliciting prophylactic or therapeutic antitumor immunity (see Timmerman and Levy, *Ann. Rev. Med.* 50:507-529, 1999). In
10 general, dendritic cells may be identified based on their typical shape (stellate *in situ*,
5 with marked cytoplasmic processes (dendrites) visible *in vitro*) and based on the lack of differentiation markers of B cells (CD19 and CD20), T cells (CD3), monocytes (CD14) and natural killer cells (CD56), as determined using standard assays. Dendritic cells
15 may, of course, be engineered to express specific cell-surface receptors or ligands that are not commonly found on dendritic cells *in vivo* or *ex vivo*, and such modified
10 dendritic cells are contemplated by the present invention. As an alternative to dendritic cells, secreted vesicles antigen-loaded dendritic cells (called exosomes) may be used
20 within a vaccine (see Zitvogel et al., *Nature Med.* 4:594-600, 1998).

Dendritic cells and progenitors may be obtained from peripheral blood, bone marrow, tumor-infiltrating cells, peritumoral tissues-infiltrating cells, lymph
25 nodes, spleen, skin, umbilical cord blood or any other suitable tissue or fluid. For
15 example, dendritic cells may be differentiated *ex vivo* by adding a combination of cytokines such as GM-CSF, IL-4, IL-13 and/or TNF α to cultures of monocytes
30 harvested from peripheral blood. Alternatively, CD34 positive cells harvested from peripheral blood, umbilical cord blood or bone marrow may be differentiated into
20 dendritic cells by adding to the culture medium combinations of GM-CSF, IL-3, TNF α , CD40 ligand, LPS, flt3 ligand and/or other compound(s) that induce maturation and
35 proliferation of dendritic cells.

Dendritic cells are conveniently categorized as "immature" and "mature" cells, which allows a simple way to discriminate between two well characterized
40 phenotypes. However, this nomenclature should not be construed to exclude all possible intermediate stages of differentiation. Immature dendritic cells are
25 characterized as APC with a high capacity for antigen uptake and processing, which correlates with the high expression of Fc γ receptor, mannose receptor and DEC-205
45 marker. The mature phenotype is typically characterized by a lower expression of these
30 markers, but a high expression of cell surface molecules responsible for T cell

5 activation such as class I and class II MHC, adhesion molecules (*e.g.*, CD54 and CD11) and costimulatory molecules (*e.g.*, CD40, CD80 and CD86).

10 APCs may generally be transfected with a polynucleotide encoding a ovarian carcinoma antigen (or portion or other variant thereof) such that the antigen, or
5 an immunogenic portion thereof, is expressed on the cell surface. Such transfection may take place *ex vivo*, and a composition or vaccine comprising such transfected cells may then be used for therapeutic purposes, as described herein. Alternatively, a gene
15 delivery vehicle that targets a dendritic or other antigen presenting cell may be administered to a patient, resulting in transfection that occurs *in vivo*. *In vivo* and *ex vivo* transfection of dendritic cells, for example, may generally be performed using any
10 methods known in the art, such as those described in WO 97/24447, or the gene gun approach described by Mahvi et al., *Immunology and cell Biology* 75:456-460, 1997. Antigen loading of dendritic cells may be achieved by incubating dendritic cells or
20 progenitor cells with the polypeptide, DNA (naked or within a plasmid vector) or RNA; or with antigen-expressing recombinant bacterium or viruses (*e.g.*, vaccinia, fowlpox,
25 adenovirus or lentivirus vectors). Prior to loading, the polypeptide may be covalently conjugated to an immunological partner that provides T cell help (*e.g.*, a carrier molecule). Alternatively, a dendritic cell may be pulsed with a non-conjugated
30 immunological partner, separately or in the presence of the polypeptide.

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CANCER THERAPY

35 In further aspects of the present invention, the compositions described herein may be used for immunotherapy of cancer, such as ovarian cancer. Within such
40 methods, pharmaceutical compositions and vaccines are typically administered to a patient. As used herein, a "patient" refers to any warm-blooded animal, preferably a
25 human. A patient may or may not be afflicted with cancer. Accordingly, the above pharmaceutical compositions and vaccines may be used to prevent the development of a
45 cancer or to treat a patient afflicted with a cancer. Within certain preferred embodiments, a patient is afflicted with ovarian cancer. Such cancer may be diagnosed
30 using criteria generally accepted in the art, including the presence of a malignant tumor. Pharmaceutical compositions and vaccines may be administered either prior to or

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5 following surgical removal of primary tumors and/or treatment such as administration of radiotherapy or conventional chemotherapeutic drugs.

10 Within certain embodiments, immunotherapy may be active immunotherapy, in which treatment relies on the *in vivo* stimulation of the endogenous host immune system to react against tumors with the administration of immuno-
5 response-modifying agents (such as tumor vaccines, bacterial adjuvants and/or cytokines).

15 Within other embodiments, immunotherapy may be passive immunotherapy, in which treatment involves the delivery of agents with established tumor-immune reactivity (such as effector cells or antibodies) that can directly or
10 indirectly mediate antitumor effects and does not necessarily depend on an intact host immune system. Examples of effector cells include T lymphocytes (such as CD8⁺ cytotoxic T lymphocytes and CD4⁺ T-helper tumor-infiltrating lymphocytes), killer
20 cells (such as Natural Killer cells and lymphokine-activated killer cells), B cells and antigen-presenting cells (such as dendritic cells and macrophages) expressing a
25 polypeptide provided herein. T cell receptors and antibody receptors specific for the polypeptides recited herein may be cloned, expressed and transferred into other vectors or effector cells for adoptive immunotherapy. The polypeptides provided herein may
30 also be used to generate antibodies or anti-idiotypic antibodies (as described above and in U.S. Patent No. 4,918,164) for passive immunotherapy.
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35 Effector cells may generally be obtained in sufficient quantities for adoptive immunotherapy by growth *in vitro*, as described herein. Culture conditions for expanding single antigen-specific effector cells to several billion in number with retention of antigen recognition *in vivo* are well known in the art. Such *in vitro* culture
40 conditions typically use intermittent stimulation with antigen, often in the presence of cytokines (such as IL-2) and non-dividing feeder cells. As noted above, immunoreactive polypeptides as provided herein may be used to rapidly expand antigen-specific T cell cultures in order to generate a sufficient number of cells for
45 immunotherapy. In particular, antigen-presenting cells, such as dendritic, macrophage or B cells, may be pulsed with immunoreactive polypeptides or transfected with one or
30 more polynucleotides using standard techniques well known in the art. For example,

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antigen-presenting cells can be transfected with a polynucleotide having a promoter appropriate for increasing expression in a recombinant virus or other expression system. Cultured effector cells for use in therapy must be able to grow and distribute widely, and to survive long term *in vivo*. Studies have shown that cultured effector cells can be induced to grow *in vivo* and to survive long term in substantial numbers by repeated stimulation with antigen supplemented with IL-2 (*see*, for example, Cheever et al., *Immunological Reviews* 157:177, 1997).

Alternatively, a vector expressing a polypeptide recited herein may be introduced into stem cells taken from a patient and clonally propagated *in vitro* for autologous transplant back into the same patient.

Routes and frequency of administration, as well as dosage, will vary from individual to individual, and may be readily established using standard techniques. In general, the pharmaceutical compositions and vaccines may be administered by injection (*e.g.*, intracutaneous, intramuscular, intravenous or subcutaneous), intranasally (*e.g.*, by aspiration), orally or in the bed of a resected tumor. Preferably, between 1 and 10 doses may be administered over a 52 week period. Preferably, 6 doses are administered, at intervals of 1 month, and booster vaccinations may be given periodically thereafter. Alternate protocols may be appropriate for individual patients. A suitable dose is an amount of a compound that, when administered as described above, is capable of promoting an anti-tumor immune response, and is at least 10-50% above the basal (*i.e.*, untreated) level. Such response can be monitored by measuring the anti-tumor antibodies in a patient or by vaccine-dependent generation of cytolytic effector cells capable of killing the patient's tumor cells *in vitro*. Such vaccines should also be capable of causing an immune response that leads to an improved clinical outcome (*e.g.*, more frequent remissions, complete or partial or longer disease-free survival) in vaccinated patients as compared to non-vaccinated patients. In general, for pharmaceutical compositions and vaccines comprising one or more polypeptides, the amount of each polypeptide present in a dose ranges from about 100 μ g to 5 mg per kg of host. Suitable dose sizes will vary with the size of the patient, but will typically range from about 0.1 mL to about 5 mL.

5 In general, an appropriate dosage and treatment regimen provides the active compound(s) in an amount sufficient to provide therapeutic and/or prophylactic benefit. Such a response can be monitored by establishing an improved clinical
10 outcome (e.g., more frequent remissions, complete or partial, or longer disease-free survival) in treated patients as compared to non-treated patients. Increases in preexisting immune responses to an ovarian carcinoma antigen generally correlate with an improved clinical outcome. Such immune responses may generally be evaluated
15 using standard proliferation, cytotoxicity or cytokine assays, which may be performed using samples obtained from a patient before and after treatment.

10 SCREENS FOR IDENTIFYING SECRETED OVARIAN CARCINOMA ANTIGENS

20 The present invention provides methods for identifying secreted tumor antigens. Within such methods, tumors are implanted into immunodeficient animals such as SCID mice and maintained for a time sufficient to permit secretion of tumor
25 antigens into serum. In general, tumors may be implanted subcutaneously or within the gonadal fat pad of an immunodeficient animal and maintained for 1-9 months, preferably 1-4 months. Implantation may generally be performed as described in WO 97/18300. The serum containing secreted antigens is then used to prepare antisera in immunocompetent mice, using standard techniques and as described herein. Briefly,
30 50-100 μ L of sera (pooled from three sets of immunodeficient mice, each set bearing a different SCID-derived human ovarian tumor) may be mixed 1:1 (vol:vol) with an appropriate adjuvant, such as RIBI-MPL or MPL + TDM (Sigma Chemical Co., St. Louis, MO) and injected intraperitoneally into syngeneic immunocompetent animals at monthly intervals for a total of 5 months. Antisera from animals immunized in such a
35 manner may be obtained by drawing blood after the third, fourth and fifth immunizations. The resulting antiserum is generally pre-cleared of *E. coli* and phage antigens and used (generally following dilution, such as 1:200) in a serological expression screen.

45 The library is typically an expression library containing cDNAs from one or more tumors of the type that was implanted into SCID mice. This expression library
30 may be prepared in any suitable vector, such as λ -screen (Novagen). cDNAs that

5 encode a polypeptide that reacts with the antiserum may be identified using standard techniques, and sequenced. Such cDNA molecules may be further characterized to evaluate expression in tumor and normal tissue, and to evaluate antigen secretion in patients.

10 5 The methods provided herein have advantages over other methods for tumor antigen discovery. In particular, all antigens identified by such methods should be secreted or released through necrosis of the tumor cells. Such antigens may be present on the surface of tumor cells for an amount of time sufficient to permit targeting and killing by the immune system, following vaccination.

10 20 METHODS FOR DETECTING CANCER

In general, a cancer may be detected in a patient based on the presence of one or more ovarian carcinoma proteins and/or polynucleotides encoding such proteins in a biological sample (such as blood, sera, urine and/or tumor biopsies) obtained from 25 the patient. In other words, such proteins may be used as markers to indicate the presence or absence of a cancer such as ovarian cancer. In addition, such proteins may be useful for the detection of other cancers. The binding agents provided herein generally permit detection of the level of protein that binds to the agent in the biological sample. Polynucleotide primers and probes may be used to detect the level of mRNA 30 encoding a tumor protein, which is also indicative of the presence or absence of a cancer. In general, an ovarian carcinoma-associated sequence should be present at a level that is at least three fold higher in tumor tissue than in normal tissue

35 There are a variety of assay formats known to those of ordinary skill in the art for using a binding agent to detect polypeptide markers in a sample. See, e.g., 40 25 Harlow and Lane, *Antibodies: A Laboratory Manual*, Cold Spring Harbor Laboratory, 1988. In general, the presence or absence of a cancer in a patient may be determined by (a) contacting a biological sample obtained from a patient with a binding agent; (b) detecting in the sample a level of polypeptide that binds to the binding agent; and (c) comparing the level of polypeptide with a predetermined cut-off value.

45 30 In a preferred embodiment, the assay involves the use of binding agent immobilized on a solid support to bind to and remove the polypeptide from the

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5 remainder of the sample. The bound polypeptide may then be detected using a
detection reagent that contains a reporter group and specifically binds to the binding
agent/polypeptide complex. Such detection reagents may comprise, for example, a
10 binding agent that specifically binds to the polypeptide or an antibody or other agent
5 that specifically binds to the binding agent, such as an anti-immunoglobulin, protein G,
protein A or a lectin. Alternatively, a competitive assay may be utilized, in which a
polypeptide is labeled with a reporter group and allowed to bind to the immobilized
15 binding agent after incubation of the binding agent with the sample. The extent to
which components of the sample inhibit the binding of the labeled polypeptide to the
10 binding agent is indicative of the reactivity of the sample with the immobilized binding
agent. Suitable polypeptides for use within such assays include full length ovarian
20 carcinoma proteins and portions thereof to which the binding agent binds, as described
above.

The solid support may be any material known to those of ordinary skill
25 in the art to which the tumor protein may be attached. For example, the solid support
may be a test well in a microtiter plate or a nitrocellulose or other suitable membrane.
Alternatively, the support may be a bead or disc, such as glass, fiberglass, latex or a
30 plastic material such as polystyrene or polyvinylchloride. The support may also be a
magnetic particle or a fiber optic sensor, such as those disclosed, for example, in U.S.
20 Patent No. 5,359,681. The binding agent may be immobilized on the solid support
using a variety of techniques known to those of skill in the art, which are amply
35 described in the patent and scientific literature. In the context of the present invention,
the term "immobilization" refers to both noncovalent association, such as adsorption,
and covalent attachment (which may be a direct linkage between the agent and
40 25 functional groups on the support or may be a linkage by way of a cross-linking agent).
Immobilization by adsorption to a well in a microtiter plate or to a membrane is
preferred. In such cases, adsorption may be achieved by contacting the binding agent,
in a suitable buffer, with the solid support for a suitable amount of time. The contact
45 time varies with temperature, but is typically between about 1 hour and about 1 day. In
30 general, contacting a well of a plastic microtiter plate (such as polystyrene or
polyvinylchloride) with an amount of binding agent ranging from about 10 ng to about

10 μg , and preferably about 100 ng to about 1 μg , is sufficient to immobilize an adequate amount of binding agent.

Covalent attachment of binding agent to a solid support may generally be achieved by first reacting the support with a bifunctional reagent that will react with both the support and a functional group, such as a hydroxyl or amino group, on the binding agent. For example, the binding agent may be covalently attached to supports having an appropriate polymer coating using benzoquinone or by condensation of an aldehyde group on the support with an amine and an active hydrogen on the binding partner (*see, e.g.*, Pierce Immunotechnology Catalog and Handbook, 1991, at A12-A13).

In certain embodiments, the assay is a two-antibody sandwich assay. This assay may be performed by first contacting an antibody that has been immobilized on a solid support, commonly the well of a microtiter plate, with the sample, such that polypeptides within the sample are allowed to bind to the immobilized antibody. Unbound sample is then removed from the immobilized polypeptide-antibody complexes and a detection reagent (preferably a second antibody capable of binding to a different site on the polypeptide) containing a reporter group is added. The amount of detection reagent that remains bound to the solid support is then determined using a method appropriate for the specific reporter group.

More specifically, once the antibody is immobilized on the support as described above, the remaining protein binding sites on the support are typically blocked. Any suitable blocking agent known to those of ordinary skill in the art, such as bovine serum albumin or Tween 20TM (Sigma Chemical Co., St. Louis, MO). The immobilized antibody is then incubated with the sample, and polypeptide is allowed to bind to the antibody. The sample may be diluted with a suitable diluent, such as phosphate-buffered saline (PBS) prior to incubation. In general, an appropriate contact time (*i.e.*, incubation time) is a period of time that is sufficient to detect the presence of polypeptide within a sample obtained from an individual with ovarian cancer. Preferably, the contact time is sufficient to achieve a level of binding that is at least about 95% of that achieved at equilibrium between bound and unbound polypeptide. Those of ordinary skill in the art will recognize that the time necessary to achieve

5 equilibrium may be readily determined by assaying the level of binding that occurs over a period of time. At room temperature, an incubation time of about 30 minutes is generally sufficient.

10 Unbound sample may then be removed by washing the solid support with an appropriate buffer, such as PBS containing 0.1% Tween 20™. The second antibody, which contains a reporter group, may then be added to the solid support. Preferred reporter groups include those groups recited above.

15 The detection reagent is then incubated with the immobilized antibody-polypeptide complex for an amount of time sufficient to detect the bound polypeptide.

20 An appropriate amount of time may generally be determined by assaying the level of binding that occurs over a period of time. Unbound detection reagent is then removed and bound detection reagent is detected using the reporter group. The method employed for detecting the reporter group depends upon the nature of the reporter group. For radioactive groups, scintillation counting or autoradiographic methods are generally appropriate. Spectroscopic methods may be used to detect dyes, luminescent groups and fluorescent groups. Biotin may be detected using avidin, coupled to a different reporter group (commonly a radioactive or fluorescent group or an enzyme). Enzyme reporter groups may generally be detected by the addition of substrate (generally for a specific period of time), followed by spectroscopic or other analysis of the reaction products.

35 To determine the presence or absence of a cancer, such as ovarian cancer, the signal detected from the reporter group that remains bound to the solid support is generally compared to a signal that corresponds to a predetermined cut-off value. In one preferred embodiment, the cut-off value for the detection of a cancer is the average mean signal obtained when the immobilized antibody is incubated with samples from patients without the cancer. In general, a sample generating a signal that is three standard deviations above the predetermined cut-off value is considered positive for the cancer. In an alternate preferred embodiment, the cut-off value is determined using a Receiver Operator Curve, according to the method of Sackett et al., *Clinical Epidemiology: A Basic Science for Clinical Medicine*, Little Brown and Co., 1985, p. 106-7. Briefly, in this embodiment, the cut-off value may be determined from a plot

5 of pairs of true positive rates (*i.e.*, sensitivity) and false positive rates (100%-specificity) that correspond to each possible cut-off value for the diagnostic test result. The cut-off value on the plot that is the closest to the upper left-hand corner (*i.e.*, the value that encloses the largest area) is the most accurate cut-off value, and a sample generating a
10 signal that is higher than the cut-off value determined by this method may be considered positive. Alternatively, the cut-off value may be shifted to the left along the plot, to minimize the false positive rate, or to the right, to minimize the false negative rate. In
15 general, a sample generating a signal that is higher than the cut-off value determined by this method is considered positive for a cancer.

10 In a related embodiment, the assay is performed in a flow-through or strip test format, wherein the binding agent is immobilized on a membrane, such as nitrocellulose. In the flow-through test, polypeptides within the sample bind to the immobilized binding agent as the sample passes through the membrane. A second, labeled binding agent then binds to the binding agent-polypeptide complex as a solution
20 containing the second binding agent flows through the membrane. The detection of bound second binding agent may then be performed as described above. In the strip test format, one end of the membrane to which binding agent is bound is immersed in a solution containing the sample. The sample migrates along the membrane through a region containing second binding agent and to the area of immobilized binding agent.
25 Concentration of second binding agent at the area of immobilized antibody indicates the presence of a cancer. Typically, the concentration of second binding agent at that site generates a pattern, such as a line, that can be read visually. The absence of such a pattern indicates a negative result. In general, the amount of binding agent immobilized on the membrane is selected to generate a visually discernible pattern when the
30 biological sample contains a level of polypeptide that would be sufficient to generate a positive signal in the two-antibody sandwich assay, in the format discussed above. Preferred binding agents for use in such assays are antibodies and antigen-binding fragments thereof. Preferably, the amount of antibody immobilized on the membrane ranges from about 25 ng to about 1 μ g, and more preferably from about 50 ng to about
35 500 ng. Such tests can typically be performed with a very small amount of biological sample.

5 Of course, numerous other assay protocols exist that are suitable for use with the tumor proteins or binding agents of the present invention. The above descriptions are intended to be exemplary only. For example, it will be apparent to those of ordinary skill in the art that the above protocols may be readily modified to use
10 ovarian carcinoma polypeptides to detect antibodies that bind to such polypeptides in a biological sample. The detection of such ovarian carcinoma protein specific antibodies may correlate with the presence of a cancer.

15 A cancer may also, or alternatively, be detected based on the presence of T cells that specifically react with an ovarian carcinoma protein in a biological sample. Within certain methods, a biological sample comprising CD4⁺ and/or CD8⁺ T cells
20 isolated from a patient is incubated with an ovarian carcinoma protein, a polynucleotide encoding such a polypeptide and/or an APC that expresses at least an immunogenic portion of such a polypeptide, and the presence or absence of specific activation of the T cells is detected. Suitable biological samples include, but are not limited to, isolated
25 T cells. For example, T cells may be isolated from a patient by routine techniques (such as by Ficoll/Hypaque density gradient centrifugation of peripheral blood lymphocytes). T cells may be incubated *in vitro* for 2-9 days (typically 4 days) at 37°C with an ovarian carcinoma protein (*e.g.*, 5 - 25 µg/ml). It may be desirable to incubate another aliquot of a T cell sample in the absence of ovarian carcinoma protein to serve as a control. For
30 CD4⁺ T cells, activation is preferably detected by evaluating proliferation of the T cells. For CD8⁺ T cells, activation is preferably detected by evaluating cytolytic activity. A level of proliferation that is at least two fold greater and/or a level of cytolytic activity that is at least 20% greater than in disease-free patients indicates the presence of a cancer in the patient.

40 As noted above, a cancer may also, or alternatively, be detected based on the level of mRNA encoding an ovarian carcinoma protein in a biological sample. For example, at least two oligonucleotide primers may be employed in a polymerase chain reaction (PCR) based assay to amplify a portion of an ovarian carcinoma protein cDNA
45 derived from a biological sample, wherein at least one of the oligonucleotide primers is specific for (*i.e.*, hybridizes to) a polynucleotide encoding the ovarian carcinoma protein. The amplified cDNA is then separated and detected using techniques well
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5 known in the art, such as gel electrophoresis. Similarly, oligonucleotide probes that specifically hybridize to a polynucleotide encoding an ovarian carcinoma protein may be used in a hybridization assay to detect the presence of polynucleotide encoding the tumor protein in a biological sample.

10 To permit hybridization under assay conditions, oligonucleotide primers and probes should comprise an oligonucleotide sequence that has at least about 60%, preferably at least about 75% and more preferably at least about 90%, identity to a portion of a polynucleotide encoding an ovarian carcinoma protein that is at least 10 nucleotides, and preferably at least 20 nucleotides, in length. Preferably, 15 oligonucleotide primers and/or probes hybridize to a polynucleotide encoding a polypeptide described herein under moderately stringent conditions, as defined above. Oligonucleotide primers and/or probes which may be usefully employed in the diagnostic methods described herein preferably are at least 10-40 nucleotides in length. In a preferred embodiment, the oligonucleotide primers comprise at least 10 contiguous 20 nucleotides, more preferably at least 15 contiguous nucleotides, of a DNA molecule having a sequence provided herein. Techniques for both PCR based assays and hybridization assays are well known in the art (*see*, for example, Mullis et al., *Cold Spring Harbor Symp. Quant. Biol.*, 51:263, 1987; Erlich ed., *PCR Technology*, Stockton Press, NY, 1989).

25 One preferred assay employs RT-PCR, in which PCR is applied in conjunction with reverse transcription. Typically, RNA is extracted from a biological sample such as a biopsy tissue and is reverse transcribed to produce cDNA molecules. PCR amplification using at least one specific primer generates a cDNA molecule, which may be separated and visualized using, for example, gel electrophoresis. Amplification 30 may be performed on biological samples taken from a test patient and from an individual who is not afflicted with a cancer. The amplification reaction may be performed on several dilutions of cDNA spanning two orders of magnitude. A two-fold or greater increase in expression in several dilutions of the test patient sample as compared to the same dilutions of the non-cancerous sample is typically considered 35 positive.

5 In another embodiment, ovarian carcinoma proteins and polynucleotides encoding such proteins may be used as markers for monitoring the progression of cancer. In this embodiment, assays as described above for the diagnosis of a cancer
10 may be performed over time, and the change in the level of reactive polypeptide(s) evaluated. For example, the assays may be performed every 24-72 hours for a period of 6 months to 1 year, and thereafter performed as needed. In general, a cancer is progressing in those patients in whom the level of polypeptide detected by the binding agent increases over time. In contrast, the cancer is not progressing when the level of reactive polypeptide either remains constant or decreases with time.

10 Certain *in vivo* diagnostic assays may be performed directly on a tumor. One such assay involves contacting tumor cells with a binding agent. The bound binding agent may then be detected directly or indirectly via a reporter group. Such binding agents may also be used in histological applications. Alternatively, polynucleotide probes may be used within such applications.

15 As noted above, to improve sensitivity, multiple ovarian carcinoma protein markers may be assayed within a given sample. It will be apparent that binding agents specific for different proteins provided herein may be combined within a single assay. Further, multiple primers or probes may be used concurrently. The selection of tumor protein markers may be based on routine experiments to determine combinations
20 that results in optimal sensitivity. In addition, or alternatively, assays for tumor proteins provided herein may be combined with assays for other known tumor antigens.

DIAGNOSTIC KITS

25 The present invention further provides kits for use within any of the above diagnostic methods. Such kits typically comprise two or more components necessary for performing a diagnostic assay. Components may be compounds, reagents, containers and/or equipment. For example, one container within a kit may contain a monoclonal antibody or fragment thereof that specifically binds to an ovarian carcinoma protein. Such antibodies or fragments may be provided attached to a support
30 material, as described above. One or more additional containers may enclose elements, such as reagents or buffers, to be used in the assay. Such kits may also, or alternatively,

5 contain a detection reagent as described above that contains a reporter group suitable for direct or indirect detection of antibody binding.

10 Alternatively, a kit may be designed to detect the level of mRNA encoding an ovarian carcinoma protein in a biological sample. Such kits generally
5 comprise at least one oligonucleotide probe or primer, as described above, that hybridizes to a polynucleotide encoding an ovarian carcinoma protein. Such an oligonucleotide may be used, for example, within a PCR or hybridization assay.
15 Additional components that may be present within such kits include a second oligonucleotide and/or a diagnostic reagent or container to facilitate the detection of a
10 polynucleotide encoding an ovarian carcinoma protein.

20 The following Examples are offered by way of illustration and not by way of limitation.

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EXAMPLES

Example 1Identification of Representative Ovarian Carcinoma Protein cDNAs

This Example illustrates the identification of cDNA molecules encoding ovarian carcinoma proteins.

Anti-SCID mouse sera (generated against sera from SCID mice carrying late passage ovarian carcinoma) was pre-cleared of E. coli and phage antigens and used at a 1:200 dilution in a serological expression screen. The library screened was made from a SCID-derived human ovarian tumor (OV9334) using a directional RH oligo(dT) priming cDNA library construction kit and the λ Screen vector (Novagen). A bacteriophage lambda screen was employed. Approximately 400,000 pfu of the amplified OV9334 library were screened.

196 positive clones were isolated. Certain sequences that appear to be novel are provided in Figures 1A-1S and SEQ ID NOs:1 to 71. Three complete insert sequences are shown in Figures 2A-2C (SEQ ID NOs:72 to 74). Other clones having known sequences are presented in Figures 15A-15EEE (SEQ ID NOs:82 to 310). Database searches identified the following sequences that were substantially identical to the sequences presented in Figures 15A-15EEE.

These clones were further characterized using microarray technology to determine mRNA expression levels in a variety of tumor and normal tissues. Such analyses were performed using a Synteni (Palo Alto, CA) microarray, according to the manufacturer's instructions. PCR amplification products were arrayed on slides, with each product occupying a unique location in the array. mRNA was extracted from the tissue sample to be tested, reverse transcribed and fluorescent-labeled cDNA probes were generated. The microarrays were probed with the labeled cDNA probes and the slides were scanned to measure fluorescence intensity. Data was analyzed using Synteni's provided GEMtools software. The results for one clone (13695, also referred to as O8E) are shown in Figure 3.

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Example 2

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Identification of Ovarian Carcinoma cDNAs using Microarray Technology

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This Example illustrates the identification of ovarian carcinoma polynucleotides by PCR subtraction and microarray analysis. Microarrays of cDNAs were analyzed for ovarian tumor-specific expression using a Synteni (Palo Alto, CA) microarray, according to the manufacturer's instructions (and essentially as described by Schena et al., *Proc. Natl. Acad. Sci. USA* 93:10614-10619, 1996 and Heller et al., *Proc. Natl. Acad. Sci. USA* 94:2150-2155, 1997).

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A PCR subtraction was performed using a tester comprising cDNA of four ovarian tumors (three of which were metastatic tumors) and a driver of cDNA from five normal tissues (adrenal gland, lung, pancreas, spleen and brain). cDNA fragments recovered from this subtraction were subjected to DNA microarray analysis where the fragments were PCR amplified, adhered to chips and hybridized with fluorescently labeled probes derived from mRNAs of human ovarian tumors and a variety of normal human tissues. In this analysis, the slides were scanned and the fluorescence intensity was measured, and the data were analyzed using Synteni's GEMtools software. In general, sequences showing at least a 5-fold increase in expression in tumor cells (relative to normal cells) were considered ovarian tumor antigens. The fluorescent results were analyzed and clones that displayed increased expression in ovarian tumors were further characterized by DNA sequencing and database searches to determine the novelty of the sequences.

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Using such assays, an ovarian tumor antigen was identified that is a splice fusion between the human T-cell leukemia virus type I oncoprotein TAX (*see* Jin et al., *Cell* 93:81-91, 1998) and an extracellular matrix protein called osteonectin. A splice junction sequence exists at the fusion point. The sequence of this clone is presented in Figure 4 and SEQ ID NO:75. Osteonectin, unspliced and unaltered, was also identified from such assays independently.

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Further clones identified by this method are referred to herein as 3f, 6b, 8e, 8h, 12c and 12h. Sequences of these clones are shown in Figures 5 to 9 and SEQ ID NOs:76 to 81. Microarray analyses were performed as described above, and are presented in Figures 10 to 14. A full length sequence encompassing clones 3f, 6b, 8e and 12h was obtained by screening an ovarian tumor (SCID-derived) cDNA library. This 2996 base pair sequence (designated O772P) is presented in SEQ ID NO:311, and the encoded 914 amino acid protein sequence is shown in SEQ ID NO:312. PSORT analysis indicates a Type 1a transmembrane protein localized to the plasma membrane.

In addition to certain of the sequences described above, this screen identified the following sequences:

Sequence	Comments
OV4vG11 (SEQ ID NO:313)	human clone 1119D9 on chromosome 20p12
OV4vB11 (SEQ ID NO:314)	human UWGC:y14c094 from chromosome 6p21
OV4vD9 (SEQ ID NO:315)	human clone 1049G16 chromosome 20q12-13.2
OV4vD5 (SEQ ID NO:316)	human KIAA0014 gene
OV4vC2 (SEQ ID NO:317)	human KIAA0084 gene
OV4vF3 (SEQ ID NO:318)	human chromosome 19 cosmid R31167
OV4VC1 (SEQ ID NO:319)	novel
OV4vH3 (SEQ ID NO:320)	novel
OV4vD2 (SEQ ID NO:321)	novel
O815P (SEQ ID NO:322)	novel
OV4vC12 (SEQ ID NO:323)	novel
OV4vA4 (SEQ ID NO:324)	novel
OV4vA3 (SEQ ID NO:325)	novel
OV4v2A5 (SEQ ID NO:326)	novel
O819P (SEQ ID NO:327)	novel
O818P (SEQ ID NO:328)	novel
O817P (SEQ ID NO:329)	novel
O816P (SEQ ID NO:330)	novel
Ov4vC5 (SEQ ID NO:331)	novel

Sequence	Comments
21721 (SEQ ID NO:332)	human lumican
21719 (SEQ ID NO:333)	human retinoic acid-binding protein II
21717 (SEQ ID NO:334)	human26S proteasome ATPase subunit
21654 (SEQ ID NO:335)	human copine I
21627 (SEQ ID NO:336)	human neuron specific gamma-2 enolase
21623 (SEQ ID NO:337)	human geranylgeranyl transferase II
21621 (SEQ ID NO:338)	human cyclin-dependent protein kinase
21616 (SEQ ID NO:339)	human prepro-megakaryocyte potentiating factor
21612 (SEQ ID NO:340)	human UPH1
21558 (SEQ ID NO:341)	human RalGDS-like 2 (RGL2)
21555 (SEQ ID NO:342)	human autoantigen P542
21548 (SEQ ID NO:343)	human actin-related protein (ARP2)
21462 (SEQ ID NO:344)	human huntingtin interacting protein
21441 (SEQ ID NO:345)	human 90K product (tumor associated antigen)
21439 (SEQ ID NO:346)	human guanine nucleotide regulator protein (tim1)
21438 (SEQ ID NO:347)	human Ku autoimmune (p70/p80) antigen
21237 (SEQ ID NO:348)	human S-laminin
21436 (SEQ ID NO:349)	human ribophorin I
21435 (SEQ ID NO:350)	human cytoplasmic chaperonin hTRiC5
21425 (SEQ ID NO:351)	humanEMX2
21423 (SEQ ID NO:352)	human p87/p89 gene
21419 (SEQ ID NO:353)	human HPBR11-7
21252 (SEQ ID NO:354)	human T1-227H
21251 (SEQ ID NO:355)	human cullin I
21247 (SEQ ID NO:356)	kunitz type protease inhibitor (KOP)
21244-1 (SEQ ID NO:357)	human protein tyrosine phosphatase receptor F (PTPRF)
21718 (SEQ ID NO:358)	human LTR repeat
OV2-90 (SEQ ID NO:359)	novel

Sequence	Comments
Human zinc finger (SEQ ID NO:360)	
Human polyA binding protein (SEQ ID NO:361)	
Human pleitrophin (SEQ ID NO:362)	
Human PAC clone 278C19 (SEQ ID NO:363)	
Human LLRep3 (SEQ ID NO:364)	
Human Kunitz type protease inhib (SEQ ID NO:365)	
Human KIAA0106 gene (SEQ ID NO:366)	
Human keratin (SEQ ID NO:367)	
Human HIV-1TAR (SEQ ID NO:368)	
Human glia derived nexin (SEQ ID NO:369)	
Human fibronectin (SEQ ID NO:370)	
Human ECMproBM40 (SEQ ID NO:371)	
Human collagen (SEQ ID NO:372)	
Human alpha enolase (SEQ ID NO:373)	
Human aldolase (SEQ ID NO:374)	
Human transf growth factor BIG H3 (SEQ ID NO:375)	
Human SPARC osteonectin (SEQ ID NO:376)	
Human SLP1 leucocyte protease (SEQ ID NO:377)	
Human mitochondrial ATP synth (SEQ ID NO:378)	
Human DNA seq clone 461P17 (SEQ ID NO:379)	
Human dbpB pro Y box (SEQ ID NO:380)	
Human 40 kDa keratin (SEQ ID NO:381)	
Human arginosuccinate synth (SEQ ID NO:382)	
Human acidic ribosomal phosphoprotein (SEQ ID NO:383)	
Human colon carcinoma laminin binding pro (SEQ ID NO:384)	

This screen further identified multiple forms of the clone O772P, referred to herein as 21013, 21003 and 21008. PSORT analysis indicates that 21003 (SEQ ID NO:386; translated as SEQ ID NO:389) and 21008 (SEQ ID NO:387; translated as SEQ ID NO:390) represent Type Ia transmembrane protein forms of

O772P. 21013 (SEQ ID NO:385; translated as SEQ ID NO:388) appears to be a truncated form of the protein and is predicted by PSORT analysis to be a secreted protein.

Additional sequence analysis resulted in a full length clone for O8E (2627 bp, which agrees with the message size observed by Northern analysis; SEQ ID NO:391). This nucleotide sequence was obtained as follows: the original O8E sequence (OrigO8Econs) was found to overlap by 33 nucleotides with a sequence from an EST clone (IMAGE#1987589). This clone provided 1042 additional nucleotides upstream of the original O8E sequence. The link between the EST and O8E was confirmed by sequencing multiple PCR fragments generated from an ovary primary tumor library using primers to the unique EST and the O8E sequence (ESTxO8EPCR). Full length status was further indicated when anchored PCR from the ovary tumor library gave several clones (AnchoredPCR cons) that all terminated upstream of the putative start methionine, but failed to yield any additional sequence information. Figure 16 presents a diagram that illustrates the location of each partial sequence within the full length O8E sequence.

Two protein sequences may be translated from the full length O8E. For "a" (SEQ ID NO:393) begins with a putative start methionine. A second form "b" (SEQ ID NO:392) includes 27 additional upstream residues to the 5' end of the nucleotide sequence.

From the foregoing it will be appreciated that, although specific embodiments of the invention have been described herein for purposes of illustration, various modifications may be made without deviating from the spirit and scope of the invention. Accordingly, the invention is not limited except as by the appended claims.

SUMMARY OF SEQUENCE LISTING

SEQ ID NOs:1-71 are ovarian carcinoma antigen polynucleotides shown in Figures 1A-1S.

SEQ ID NOs:72-74 are ovarian carcinoma antigen polynucleotides shown in Figures 2A-2C.

SEQ ID NO:75 is the ovarian carcinoma polynucleotide 3g (Figure 4).

5 SEQ ID NO:76 is the ovarian carcinoma polynucleotide 3f (Figure 5).
SEQ ID NO:77 is the ovarian carcinoma polynucleotide 6b (Figure 6).
SEQ ID NO:78 is the ovarian carcinoma polynucleotide 8e (Figure 7A).
10 SEQ ID NO:79 is the ovarian carcinoma polynucleotide 8h (Figure 7B).
5 SEQ ID NO:80 is the ovarian carcinoma polynucleotide 12e (Figure 8).
SEQ ID NO:81 is the ovarian carcinoma polynucleotide 12h (Figure 9).
SEQ ID NOs:82-310 are ovarian carcinoma antigen polynucleotides
15 shown in Figures 15A-15EEE.
SEQ ID NO:311 is a full length sequence of ovarian carcinoma
10 polynucleotide O772P.
20 SEQ ID NO:312 is the O772P amino acid sequence.
SEQ ID NOs:313-384 are ovarian carcinoma antigen polynucleotides.
SEQ ID NOs:385-390 present sequences of O772P forms.
25 SEQ ID NO:391 is a full length sequence of ovarian carcinoma
15 polynucleotide O8E.
SEQ ID NOs:392-393 are protein sequences encoded by O8E.

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CLAIMS

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1. An isolated polypeptide comprising at least an immunogenic portion of an ovarian carcinoma protein, or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

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(a) polynucleotides recited in any one of SEQ ID NOs:1-81, 313-331, 359, 366, 379, 385-387 or 391; and

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(b) complements of the foregoing polynucleotides.

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2. A polypeptide according to claim 1, wherein the polypeptide comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(a) polynucleotides recited in any one of 1-81, 313-331, 359, 366, 379, 385-387 or 391; and

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(b) complements of such polynucleotides.

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3. An isolated polynucleotide encoding at least 5 amino acid residues of a polypeptide according to claim polypeptide comprising at least an immunogenic portion of an ovarian carcinoma protein, or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

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(a) polynucleotides recited in any one of SEQ ID NOs:1-81, 319-331, 359, 385-387 or 391; and

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(b) complements of the foregoing polynucleotides

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4. A polynucleotide according to claim 3, wherein the polynucleotide encodes an immunogenic portion of the polypeptide.

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5. A polynucleotide according to claim 3, wherein the polynucleotide comprises a sequence recited in any one of SEQ ID NOs:1-81, 319-331, 359, 385-387, 391 or a complement of any of the foregoing sequences.

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6. An isolated polynucleotide complementary to a polynucleotide according to claim 3.

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7. An expression vector comprising a polynucleotide according to claim 3 or claim 6.

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8. A host cell transformed or transfected with an expression vector according to claim 7.

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9. A pharmaceutical composition comprising a polypeptide according to claim 1, in combination with a physiologically acceptable carrier.

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10. A pharmaceutical composition according to claim 9, wherein the polypeptide comprises an amino acid sequence encoded by a polynucleotide that comprises a sequence recited in any one of SEQ ID NOs:1-81, 313-331, 359, 366, 379, 385-387 or 391.

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11. A vaccine comprising a polypeptide according to claim 1, in combination with a non-specific immune response enhancer.

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12. A vaccine according to claim 11, wherein the polypeptide comprises an amino acid sequence encoded by a polynucleotide that comprises a sequence recited in any one of SEQ ID NOs:1-81, 313-331, 359, 366, 379, 385-387 or 391.

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13. A pharmaceutical composition comprising:

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(a) a polynucleotide encoding an ovarian carcinoma polypeptide, wherein the polypeptide comprises at least an immunogenic portion of an ovarian carcinoma protein or a variant thereof that differs in one or more substitutions, deletions, additions and/or

10 insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

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(i) polynucleotides recited in any one of SEQ ID NOs:1-81, 319-331, 359, 385-387 or 391; and

(ii) complements of the foregoing polynucleotides; and

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(b) a physiologically acceptable carrier.

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14. A pharmaceutical composition according to claim 13, wherein the polynucleotide comprises a sequence recited in any one of SEQ ID NOs:1-81, 319-331, 359, 385-387, 391 or a complement of any of the foregoing sequences.

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15. A vaccine comprising:

(a) a polynucleotide encoding an ovarian carcinoma polypeptide, wherein the polypeptide comprises at least an immunogenic portion of an ovarian carcinoma protein or a variant thereof that differs in one or more substitutions, deletions, additions and/or

35 insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

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(i) polynucleotides recited in any one of SEQ ID NOs:1-81, 313-331, 359, 366, 379, 385-387 or 391; and

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(ii) complements of the foregoing polynucleotides; and

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16. A vaccine according to claim 15, wherein the polynucleotide comprises a sequence recited in any one of SEQ ID NOs:1-81, 319-331, 359, 385-387 or 391.

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17. A pharmaceutical composition comprising:

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5 (a) an antibody that specifically binds to an ovarian carcinoma protein,
wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by
a polynucleotide sequence selected from the group consisting of:

10 (i) polynucleotides recited in any one of SEQ ID NOs:1-81, 313-
331, 359, 366, 379, 385-387 or 391; and

(ii) complements of such polynucleotides; and

15 (b) a physiologically acceptable carrier.

18. A method for inhibiting the development of ovarian cancer in a patient,
comprising administering to a patient an effective amount of an agent selected from the group
20 consisting of:

(a) an ovarian carcinoma polypeptide comprising at least an immunogenic
portion of an ovarian carcinoma protein or a variant thereof that differs in one or more
25 substitutions, deletions, additions and/or insertions such that the ability of the variant to react
with antigen-specific antisera is not substantially diminished, wherein the ovarian carcinoma
protein comprises an amino acid sequence that is encoded by a polynucleotide sequence
selected from the group consisting of:

30 (i) polynucleotides recited in any one of SEQ ID NOs:1-387 or
391; and

(ii) complements of such polynucleotides;

35 (b) a polynucleotide encoding a polypeptide as recited in (a); and

(c) an antibody that specifically binds to an ovarian carcinoma protein that
comprises an amino acid sequence that is encoded by a polynucleotide sequence selected
40 from the group consisting of:

(i) polynucleotides recited in any one of SEQ ID NOs:1-387 or
391; and

(ii) complements of such polynucleotides;

45 and thereby inhibiting the development of ovarian cancer in the patient.

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19. A method according to claim 18, wherein the agent is present within a pharmaceutical composition according to any one of claims 9, 13 or 17.

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20. A method according to claim 18, wherein the agent is present within a vaccine according to any one of claims 11, 15 or 18.

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21. A fusion protein comprising at least one polypeptide according to claim 1.

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22. A polynucleotide encoding a fusion protein according to claim 21.

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23. A pharmaceutical composition comprising a fusion protein according to claim 21 in combination with a physiologically acceptable carrier.

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24. A vaccine comprising a fusion protein according to claim 21 in combination with a non-specific immune response enhancer.

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25. A pharmaceutical composition comprising a polynucleotide according to claim 22 in combination with a physiologically acceptable carrier.

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26. A vaccine comprising a polynucleotide according to claim 22 in combination with a non-specific immune response enhancer.

27. A method for inhibiting the development of ovarian cancer in a patient, comprising administering to a patient an effective amount of a pharmaceutical composition according to claim 23 or claim 25.

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28. A method for inhibiting the development of ovarian cancer in a patient, comprising administering to a patient an effective amount of a vaccine according to claim 23 or claim 26.

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29. A pharmaceutical composition, comprising:

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(a) an antigen presenting cell that expresses an ovarian carcinoma polypeptide comprising at least an immunogenic portion of an ovarian carcinoma protein or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

15

(i) polynucleotides recited in any one of SEQ ID NOs:1-387 or 391; and

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(ii) complements of such polynucleotides; and

(b) a pharmaceutically acceptable carrier or excipient.

30. A vaccine, comprising:

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(a) an antigen presenting cell that expresses an ovarian carcinoma polypeptide comprising at least an immunogenic portion of an ovarian carcinoma protein or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

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(i) polynucleotides recited in any one of SEQ ID NOs:1-387 or 391; and

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(ii) complements of such polynucleotides; and

(b) a non-specific immune response enhancer.

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31. A vaccine comprising:

(a) an anti-idiotypic antibody or antigen-binding fragment thereof that is specifically bound by an antibody that specifically binds to an ovarian carcinoma protein that comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

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(i) polynucleotides recited in any one of SEQ ID NOs:1-387 or 391; and

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- (ii) complements of such polynucleotides; and
 - (b) non-specific immune response enhancer.

10 32. A vaccine according to claim 30 or claim 31, wherein the immune response enhancer is an adjuvant.

15 33. A pharmaceutical composition, comprising:

(a) a T cell that specifically reacts with an ovarian carcinoma polypeptide comprising at least an immunogenic portion of an ovarian carcinoma protein or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

20 (i) polynucleotides recited in any one of SEQ ID NOs:1-387 or 391; and

(ii) complements of such polynucleotides; and

25 (b) a physiologically acceptable carrier.

30 34. A vaccine, comprising:

(a) a T cell that specifically reacts with an ovarian carcinoma polypeptide comprising at least an immunogenic portion of an ovarian carcinoma protein or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

35 (i) polynucleotides recited in any one of SEQ ID NOs:1-387 or 391; and

(ii) complements of such polynucleotides; and

40 (b) a non-specific immune response enhancer.

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35. A method for inhibiting the development of ovarian cancer in a patient, comprising administering to the patient an effective amount of a pharmaceutical composition according to claim 29 or claim 33.

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36. A method for inhibiting the development of ovarian cancer in a patient, comprising administering to the patient an effective amount of a vaccine according to any one of claims 30, 31 or 34.

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37. A method for stimulating and/or expanding T cells, comprising contacting T cells with:

20 (a) an ovarian carcinoma polypeptide comprising at least an immunogenic portion of an ovarian carcinoma protein or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

25 (i) polynucleotides recited in any one of SEQ ID NOs:1-387 or 391; and

30 (ii) complements of such polynucleotides;

(b) a polynucleotide encoding such a polypeptide; and/or

35 (c) an antigen presenting cell that expresses such a polypeptide under conditions and for a time sufficient to permit the stimulation and/or expansion of T cells.

40 38. A method according to claim 37, wherein the T cells are cloned prior to expansion.

45 39. A method for stimulating and/or expanding T cells in a mammal, comprising administering to a mammal a pharmaceutical composition comprising:

(a) one or more of:

50 (i) an ovarian carcinoma polypeptide comprising at least an immunogenic portion of an ovarian carcinoma protein or a variant thereof that differs in one

5 or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide
10 sequence selected from the group consisting of:

polynucleotides recited in any one of SEQ ID NOs:1-387 or
391; and

15 complements of such polynucleotides;

(ii) a polynucleotide encoding an ovarian carcinoma polypeptide;

or

(iii) an antigen-presenting cell that expresses an ovarian carcinoma
20 polypeptide; and

(b) a physiologically acceptable carrier or excipient;

and thereby stimulating and/or expanding T cells in a mammal.

25 40. A method for stimulating and/or expanding T cells in a mammal, comprising administering to a mammal a vaccine comprising:

(a) one or more of:

30 (i) an ovarian carcinoma polypeptide comprising at least an immunogenic portion of an ovarian carcinoma protein or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide
35 sequence selected from the group consisting of:

40 polynucleotides recited in any one of SEQ ID NOs:1-387 or 391; and

complements of such polynucleotides;

(ii) a polynucleotide encoding an ovarian carcinoma polypeptide;

45 or

(iii) an antigen-presenting cell that expresses an ovarian carcinoma
50 polypeptide; and

- 5
- (b) a non-specific immune response enhancer;
and thereby stimulating and/or expanding T cells in a mammal.

10 41. A method for inhibiting the development of ovarian cancer in a patient, comprising administering to a patient T cells prepared according to the method of claim 39 or claim 40.

15 42. A method for inhibiting the development of ovarian cancer in a patient, comprising the steps of:

- 20 (a) incubating CD4⁺ T cells isolated from a patient with one or more of:

(i) an ovarian carcinoma polypeptide comprising at least an immunogenic portion of an ovarian carcinoma protein or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

30 polynucleotides recited in any one of SEQ ID NOs:1-387 or 391; and

complements of such polynucleotides;

- (ii) a polynucleotide encoding an ovarian carcinoma polypeptide;

35 or

(iii) an antigen-presenting cell that expresses an ovarian carcinoma polypeptide;

such that T cells proliferate; and

- 40 (b) administering to the patient an effective amount of the proliferated T cells, and therefrom inhibiting the development of ovarian cancer in the patient.

45 43. A method for inhibiting the development of ovarian cancer in a patient, comprising the steps of:

- (a) incubating CD4⁺ T cells isolated from a patient with one or more of:

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5 (i) an ovarian carcinoma polypeptide comprising at least an immunogenic portion of an ovarian carcinoma protein or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant
10 to react with antigen-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

15 polynucleotides recited in any one of SEQ ID NOs:1-387 or 391; and

complements of such polynucleotides;

20 (ii) a polynucleotide encoding an ovarian carcinoma polypeptide;
or

(iii) an antigen-presenting cell that expresses an ovarian carcinoma polypeptide;

25 such that T cells proliferate;

(b) cloning one or more proliferated cells; and

(c) administering to the patient an effective amount of the cloned T cells.

30 44. A method for inhibiting the development of ovarian cancer in a patient, comprising the steps of:

(a) incubating CD8⁺ T cells isolated from a patient with one or more of:

35 (i) an ovarian carcinoma polypeptide comprising at least an immunogenic portion of an ovarian carcinoma protein or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant
40 to react with antigen-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

45 polynucleotides recited in any one of SEQ ID NOs:1-387 or 391; and

complements of such polynucleotides;

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(ii) a polynucleotide encoding an ovarian carcinoma polypeptide;

or

10

(iii) an antigen-presenting cell that expresses an ovarian carcinoma polypeptide;

such that T cells proliferate; and

15

(b) administering to the patient an effective amount of the proliferated T cells, and therefrom inhibiting the development of ovarian cancer in the patient.

20

45. A method for inhibiting the development of ovarian cancer in a patient, comprising the steps of:

(a) incubating CD8⁺ T cells isolated from a patient with one or more of:

25

(i) an ovarian carcinoma polypeptide comprising at least an immunogenic portion of an ovarian carcinoma protein or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

30

polynucleotides recited in any one of SEQ ID NOs:1-387 or 391; and

complements of such polynucleotides;

35

(ii) a polynucleotide encoding an ovarian carcinoma polypeptide;

or

40

(iii) an antigen-presenting cell that expresses an ovarian carcinoma polypeptide;

such that the T cells proliferate;

(b) cloning one or more proliferated cells; and

45

(c) administering to the patient an effective amount of the cloned T cells.

50

46. A method for identifying a secreted tumor antigen, comprising the steps of:

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- (a) implanting tumor cells in an immunodeficient mammal;
- (b) obtaining serum from the immunodeficient mammal after a time sufficient to permit secretion of tumor antigens into the serum;
- (c) immunizing an immunocompetent mammal with the serum;
- (d) obtaining antiserum from the immunocompetent mammal; and
- (e) screening a tumor expression library with the antiserum, and therefrom identifying a secreted tumor antigen.

20

47. A method according to claim 46, wherein the immunodeficient mammal is a SCID mouse and wherein the immunocompetent mammal is an immunocompetent mouse.

25

48. A method for identifying a secreted ovarian carcinoma antigen, comprising the steps of:

30

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- (a) implanting ovarian carcinoma cells in a SCID mouse;
- (b) obtaining serum from the SCID mouse after a time sufficient to permit secretion of ovarian carcinoma antigens into the serum;
- (c) immunizing an immunocompetent mouse with the serum;
- (d) obtaining antiserum from the immunocompetent mouse; and
- (e) screening an ovarian carcinoma expression library with the antiserum, and therefrom identifying a secreted ovarian carcinoma antigen.

40

49. A method for determining the presence or absence of a cancer in a patient, comprising the steps of:

45

- (a) contacting a biological sample obtained from a patient with a binding agent that binds to an ovarian carcinoma protein, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

50

55

- 5
- (i) polynucleotides recited in any one of SEQ ID NOs:1-387 or 391; and
- (ii) complements of the foregoing polynucleotides;
- 10 (b) detecting in the sample an amount of polypeptide that binds to the binding agent; and
- (c) comparing the amount of polypeptide to a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient.
- 15

50. A method according to claim 49, wherein the binding agent is an antibody.

20

51. A method according to claim 50, wherein the antibody is a monoclonal antibody.

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52. A method according to claim 49, wherein the cancer is ovarian cancer.

53. A method for monitoring the progression of a cancer in a patient, comprising the steps of:

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(a) contacting a biological sample obtained from a patient at a first point in time with a binding agent that binds to an ovarian carcinoma protein, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

35

(i) polynucleotides recited in any one of SEQ ID NOs:1-387 or 391; and

40

(ii) complements of the foregoing polynucleotides;

(b) detecting in the sample an amount of polypeptide that binds to the binding agent;

(c) repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and

45

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5 (d) comparing the amount of polypeptide detected in step (c) to the amount detected in step (b) and therefrom monitoring the progression of the cancer in the patient.

10 54. A method according to claim 53, wherein the binding agent is an antibody.

15 55. A method according to claim 54, wherein the antibody is a monoclonal antibody.

20 56. A method according to claim 53, wherein the cancer is ovarian cancer.

57. A method for determining the presence or absence of a cancer in a patient, comprising the steps of:

25 (a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes an ovarian carcinoma protein, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

30 (i) polynucleotides recited in any one of SEQ ID NOs:1-387 or 391; and

(ii) complements of the foregoing polynucleotides;

35 (b) detecting in the sample an amount of a polynucleotide that hybridizes to the oligonucleotide; and

40 (c) comparing the amount of polynucleotide that hybridizes to the oligonucleotide to a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient.

45 58. A method according to claim 57, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a polymerase chain reaction.

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59. A method according to claim 57, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a hybridization assay.

10

60. A method for monitoring the progression of a cancer in a patient, comprising the steps of:

15

(a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes an ovarian carcinoma protein, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

20

(i) polynucleotides recited in any one of SEQ ID NOs:1-387 or 391; and

(ii) complements of the foregoing polynucleotides;

25

(b) detecting in the sample an amount of a polynucleotide that hybridizes to the oligonucleotide;

(c) repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and

30

(d) comparing the amount of polynucleotide detected in step (c) to the amount detected in step (b) and therefrom monitoring the progression of the cancer in the patient.

35

61. A method according to claim 60, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a polymerase chain reaction.

40

62. A method according to claim 60, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a hybridization assay.

45

63. A diagnostic kit, comprising:

(a) one or more antibodies or antigen-binding fragments thereof that specifically bind to an ovarian carcinoma protein that comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

50

55

5 (i) polynucleotides recited in any one of SEQ ID NOs:1-387 or 391; and

(ii) complements of the foregoing polynucleotides.; and

10 (b) a detection reagent comprising a reporter group.

15 64. A kit according to claim 63, wherein the antibodies are immobilized on a solid support.

20 65. A kit according to claim 63, wherein the solid support comprises nitrocellulose, latex or a plastic material.

25 66. A kit according to claim 63, wherein the detection reagent comprises an anti-immunoglobulin, protein G, protein A or lectin.

30 67. A kit according to claim 63, wherein the reporter group is selected from the group consisting of radioisotopes, fluorescent groups, luminescent groups, enzymes, biotin and dye particles.

35 68. A diagnostic kit, comprising:

(a) an oligonucleotide comprising 10 to 40 nucleotides that hybridize under moderately stringent conditions to a polynucleotide that encodes an ovarian carcinoma protein, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

40 (i) polynucleotides recited in any one of SEQ ID NOs:1-387 or 391; and

(ii) complements of the foregoing polynucleotides; and

45 (b) a diagnostic reagent for use in a polymerase chain reaction or hybridization assay.

50

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SEQUENCE LISTING

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<120> COMPOSITIONS AND METHODS FOR THE THERAPY AND
DIAGNOSIS OF OVARIAN CANCER

<130> 210121.462PC

<140> PCT

<141> 1999-12-17

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tcgcccgcgc cgcgcgcgct cgcacgcgca gcctgctgcc gagagtgggc tgccccgcgc 120
tgccgntgcc g 131
```

<210> 15
<211> 692
<212> DNA
<213> Homo sapien

```
<400> 15
atctcttgta tgccaaatat ttaatatata tctttgaaac aagttcagat gaaataaaaa 60
tcaaagtttg caaaaacgtg aagattaact taattgtcaa atattcctca ttgccccaaa 120
tcagtatttt ttttatttct atgcaaaagt atgccttcaa actgcttaaa tgatatatga 180
tatgatacac aaaccagttt tcaaatagta aagccagtc tcttgcaatt gtaagaaata 240
ggtaaaagat tataagacac cttacacaca cacacacaca cacacacgtg tgcacgccaa 300
tgacaaaaaa caatttgccc tctcctaaaa taagaacatg aagaccotta attgctgcca 360
ggaggggaaca ctgtgtcacc cctccctaca atccaggtag ttctctttaa tccaatagca 420
aatctgggca tatttgagaq gagtgtattt gacagccacg ttgaatcct gtgggggaac 480
```

```
attcatgtcc acccactggt gccctgaaaa aatgccaaata attttttcgct cccacttctg 540
ctgtctgtctc ttccacatcc tcacatagac cccagaccgg ctggccctcg gctgggcatc 600
gcattgctgg tagagcaagt cataggtctc gtctttgacg tcacagaagc gatacaccaa 660
attgcctggg cggtcattgt cataaccaga ga 692
```

<210> 16
<211> 728
<212> DNA
<213> Homo sapien

```
<400> 16
cagacgggggt ttccactatgt tggctaggtt ggtcttgaac tcttgacttc aggtgatctg 60
cctgccttgg cctcccaaag tgctgggatt acaggcataa gccactgcgc cggctgctgc 120
tgatgggttc ataaggcttt tccccctttt gctcagcact tctccttctt gccgccatgt 180
gaagaaggac atgttttgcct ccccttccac cagcattgta agttgtttcc tgaggcctcc 240
ccggccatgc tgaactgtga gtcaattaaa cctctttctt ttataaatta tccagttttg 300
ggtatgtctt tattagtaga atgagaacag actaatacan ccttaaagg agactgacgg 360
agaggattct tcttgatcc cagcacttcc tctgaatgct actgacattc ttcttgagga 420
ctttaaactg ggagatagaa aacagattcc atggctcagc agcctgagag caggagggga 480
gccaaagctat agatgacatg ggcagcctcc cctgaggcca gctgtggcgg aacctgggca 540
gtgctgccac ccaccccacc agggccaagt cctgtccttg gagagccaag cctcaatcac 600
tgctagcctc aagtgtccc aagccacagt ggctaggggg actcagggaa cagttccacg 660
ctgcacctac ttctcttacc tttaaccttc atacctcaa agtagaccat gttcatgagg 720
tccaaagg 728
```

<210> 17
<211> 531
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(531)
<223> n = A,T,C or G

```
<400> 17
aagcaggaa gccactgcgg ctcttggttg aaaagcggcg ccaggctcgy yaacagaggg 60
aacgcgaaga acaggagcgg aagctgcagg ctgaaaggga caagcgaatg cgagaggagc 120
agctggcccg ggaggctgaa gcccgggctg aacgtgaggc cgaggcgcgg agacgggagg 180
agcaggaggc tcyagagaag gcgcaggctg aqcaggagga gcaggagcga ctgcagaagc 240
agaaagagga agccgaagcc cggctcccgg aagaagctga gcgccagcgc caggagcggg 300
aaaagcactt tcagaaggag gaacaggaga gacaagagcg aagaaagcgg ctggaggaga 360
taatgaagag gactcggaaa tcagaagcgg ccgaaaccaa gaagcaggat gcaaaggaga 420
ccgcagctaa caattccgyc ccagaccctt gtgaaagctg tagagactcg gccctctggg 480
cttccagaaa ggattctatt gcagaaagga aggagctnng cccccangg a 531
```

<210> 18
<211> 1041
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(1041)
<223> n = A,T,C or G

<400> 18

ctctgtggaa	aactgatgag	gaatgaattt	accattaccc	atgtttctcat	ccccaaagcaa	60
agtgcctgggt	ctgattactg	caacacagag	aacgaagaag	aacttttccct	catacaggat	120
cagcaggggcc	tcatcacact	gggctggatt	catactcacc	ccacacagac	cgcgtttctc	180
tcagtgctcg	acctacacac	tcactgctct	taccagatga	tgttgccaga	gtcagtagcc	240
attgtttgct	cccccaagtt	ccaggaaact	ggattcttta	aactaactga	ccatggacta	300
gaggagattt	cttcctgtcg	ccagaaagga	tttcatccac	acagcaagga	tccacctctg	360
ttctgtagct	gcagccacgt	gactgttggtg	gacagagcag	tgaccatcac	agaccttcga	420
tgagcgtttg	agtcacaacac	cttccaagaa	caacaaaacc	atatcagtggt	actgtagccc	480
cttaatttaa	gctttctaga	aagctttgga	agtttttgta	gatagtagaa	agggggggcat	540
cacntgagaa	agagctgatt	ttgtatttca	ggtttgaaaa	gaaataactg	aacatatttt	600
ttaggcaagt	cagaaagaga	acatggtcac	ccaaaagcaa	ctgtaactca	gaaattaagt	660
tactcagaaa	ttaagtagct	cagaaattaa	gaaagaatgg	tataatgaac	ccccatatac	720
cttcccttct	ggattcacca	attgttaaca	tttttttccct	ctcagctatc	cttctaattt	780
ctctctaat	tcaatttgtt	tatatattac	ctcgggctca	ataagggcat	ctgtgcagaa	840
atttggaagc	catttagaaa	atcttttgga	ttttcctgtg	gtttatggca	atatgaatgg	900
agcttattac	tggggtgagg	gacagcttac	tccatttgac	cagattgttt	ggctaacaca	960
tcccgaagaa	tgattttgtc	aggaattatt	gttattttaa	aaatatttca	ggatattttt	1020
ctctacaat	aaagtaacaa	t				1041

<210> 19

<211> 1043

<212> DNA

<213> Homo sapien

<400> 19

ctctgtggaa	aactgatgag	gaatgaattt	accattaccc	atgtttctcat	ccccaaagcaa	60
agtgcctgggt	ctgattactg	caacacagag	aacgaagaag	aacttttccct	catacaggat	120
cagcaggggcc	tcatcacact	gggctggatt	catactcacc	ccacacagac	cgcgtttctc	180
tcagtgctcg	acctacacac	tcactgctct	taccagatga	tgttgccaga	gtcagtagcc	240
attgtttgct	cccccaagtt	ccaggaaact	ggattcttta	aactaactga	ccatggacta	300
gaggagattt	cttcctgtcg	ccagaaagga	tttcatccac	acagcaagga	tccacctctg	360
ttctgtagct	gcagccacgt	gactgttggtg	gacagagcag	tgaccatcac	agaccttcga	420
tgagcgtttg	agtcacaacac	cttccaagaa	caacaaaacc	atatcagtggt	actgtagccc	480
cttaatttaa	gctttctaga	aagctttgga	agtttttgta	gatagtagaa	agggggggcat	540
cacntgagaa	agagctgatt	ttgtatttca	ggtttgaaaa	gaaataactg	aacatatttt	600
ttaggcaagt	cagaaagaga	acatggtcac	ccaaaagcaa	ctgtaactca	gaaattaagt	660
tactcagaaa	ttaagtagct	cagaaattaa	gaaagaatgg	tataatgaac	ccccatatac	720
cttcccttct	ggattcacca	attgttaaca	tttttttccct	ctcagctatc	cttctaattt	780
ctctctaat	tcaatttgtt	tatatattac	ctcgggctca	ataagggcat	ctgtgcagaa	840
atttggaagc	catttagaaa	atcttttgga	ttttcctgtg	gtttatggca	atatgaatgg	900
agcttattac	tggggtgagg	gacagcttac	tccatttgac	cagattgttt	ggctaacaca	960
tcccgaagaa	tgattttgtc	aggaattatt	gttattttaa	aaatatttca	ggatattttt	1020
ctctacaat	aaagtaacaa	tta				1043

<210> 20

<211> 448

<212> DNA

<213> Homo sapien

<400> 20

ggacgacaag	gccatggcga	tatcggtacc	gaattcaagc	ctttggaatt	aaataaacct	60
ggaacagggg	aggtgaanagt	tggagtgaag	tgtcttccat	atctatacct	ttgtgcacag	120
ttgaatggga	actgttttggg	tttagggcat	cttagagttg	attgatggaa	aaagcagaca	180

```

ggaactgggtg ggaggccaag tggggaagtt ggtgaatgtg gaataactta cctttgtgct 240
ccacttaaac cagatgtgtt gcagctttcc tgacatgcaa ggatctactt taattccaca 300
ctctcattaa taaattgaat aaaagggaat gttttggcac ctgatataat ctgccaggct 360
atgtgocagt aggaaggat ggtttccctt aacaagccca atgcaactggg ctgactttat 420
aaattattta ataaaatgaa ctattatc 448

```

<210> 21
 <211> 411
 <212> DNA
 <213> Homo sapien

```

<400> 21
ggcagtgaca ttaccatca tgggaaccac cttccctttt cttcaggatt ctctgtagt 60
gaagagagca cccagtgttg ggcgaaaac atctgaaagt agggagaaga acctaaaata 120
atcagtatct cagagggctc taagggtgcca agaagtctca ctggacattt aagtgcacac 180
aaaggcatac tttcggaatc gccaaagtc aaactttctaa cttctgtctc tctcagagac 240
aagtgcagct caagagtcta ctgctttagt ggcaactaca gaaaactggt gttaccacaga 300
aaaacaggag caattagaaa tggttccaat atttcaaage tccgcaaca ggatgtgctt 360
tcctttgccc atttaggggt tcttctcttt cctttctctt tattaaccac t 411

```

<210> 22
 <211> 896
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(896)
 <223> n = A,T,C or G

```

<400> 22
tgcgtgaaa acaacggcct cctttactgt taaaatgcag ccacagggtg ttagccgtgg 60
gcatctcaac caccagcctc tgtggggggc aggtggggct cctgtggggc ctctggggcc 120
acgtccagcc tctgtcctct gcttccggtt cttcgacagt gttcccgcca tccctgggtc 180
cttggtaact ggctggggcc tctgtgtgtg ctccagcagc tccctcaggg ggtcggcccg 240
cttcaccgca gctcatgtt gtgtccggag gctgtccagc gctcctcctt tctcggcgag 300
ggctgtcttc accctccggn qcacctctc cagctccagc tgcgtggcgg cctgcagcgt 360
ggccagctcg gcttggcct gcgcgtctc ctctccag gctgcacgac ggtcctcgaa 420
ctcctggcgg atcacctggg ccagggtgct gcgctcgcta gaaagctgct cgttcaccgc 480
ctgcgcctcc tccagcgccc gctcctctg ccgcacaagg cctgcagac gcagattctc 540
gcctcggccc tccccaaagt ggccttcag ctccgagcac cgtcctgaa gcttccgctc 600
cgactgctcc agctcggaga gctcggcctc gtaactgttc cgttaagcgt tgatcgggct 660
ctcggcagcc ttctcactct cctccttggc cagcgccatg tcggcctcca gccggtgaat 720
gaccagctca atctccttgt cccggccttt ccggatttct tccctcagct cctgttcccg 780
gttcagcagc cagcctcct ccttccctgt ggggcggccc tcccaagcct gcctctccag 840
ctccagctgc tgcctcaggg tattcagctc catctggcgg gctgcagcgg tggcca 896

```

<210> 23
 <211> 111
 <212> DNA
 <213> Homo sapien

```

<400> 23
caacttatta cttgaaatta taatatagcc tgtccgtttg ctgtttccag gctgtgatat 60
atcttccatg tggtttgact ttaaaaataa ataaggttta attttctccc c 111

```

<210> 24
<211> 531
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(531)
<223> n = A,T,C or G

<400> 24
tgcaagtcac gggagtttat ttatttaatt tttttccca gatggagact ctgtcgcca 60
ggctgagtg caatggtgtg atcttgctc actgcaacct ccacctctg ggttcaagcg 120
attctctctg cacagcctcc cgagtagctg ggattacagg tgcccgcac cacaccagc 180
taatttttat atttttagta aagacagggt ttcccatgt tggccaggct ggtcttgaac 240
ttctgacctc aggtgatcca cctgcctcgg cctcccaaag tggtgggatt acaggcgtga 300
gtacaccctg cctggccagc cactggagt taaaggacag tcatgttggc tccagcctaa 360
ggcggcattt tccccatca gaaagcccg ggctcctgta cctcnaaata gggcacctgt 420
aaaqtcacgc agtgaagtct ctgctctaac tggccacccg gggccattgg cntctgacac 480
ngccttgcca ggagcctgc atctgcaaaa gaaaagttca cttcctttcc g 531

<210> 25
<211> 471
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(471)
<223> n = A,T,C or G

<400> 25
cagagaacct kagaaagatg tcgcgttttc ttttaattgaa tgagagaagc ccatttgtat 60
ccctgaatca ttgagaaaag gcggcggtgg cgacagcggc gacctaggga tcgatctgga 120
gggacttggg gagcgtgcag agacctctag ctgcagcgcg agggacctcc cgcgggagc 180
cctggggagc agatggacct tactggaaat cagttggatt cagatttctc tcagcaagat 240
actccttgcc tgataattga agattctcag cctgaaagcc aggttctaya ggatgattct 300
ggttctcact tcagtatgct atctcgacac cttcctaate tccagacgca caaagaaaat 360
cctgtgttgg atgttgngtc caatccttga acaaacagct ggagaaganc gaggagaccg 420
gtaatatgtg gttcaatgaa catttgaaaag aaaaccaggt tgcagaccct g 471

<210> 26
<211> 541
<212> DNA
<213> Homo sapien

<400> 26
gactgtcctg aacaagggac ctctgaccag agagctgcag gagatgcaga gtggtggcag 60
gagtggaaag caaagaacac ccaccttccc cccttgaagg agtagagcaa ccatacagaag 120
atactgtttt attgctcttg tcaaacaaat cttcttgagt tgacaaaacc tcaggctctg 180
gtgacttctg aatctgcagt ccactttcca taagttcttg tgcagacaac tgttcttttg 240
cttccatagc agcaacagat gctttggggc taaaaggcat gtcctctgac cttgcagggtg 300
gtggattttg ctcttttaca acatgtacat ccttactggg ctgtgctgtc acagggatgt 360
ccttgctgga ctgttctgct atggggatat cttcgttggg ctgttcttca tgcttaattg 420

cagtattagc atccacatca ganagcctgg tataaccaga gttggtggtt actgatlqta 480
gctgctcttt gtccacttca tatggcaca gtaatttctt caacatcctg gctctgggaa 540
g 541

<210> 27
<211> 461
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(461)
<223> n = A,T,C or G

<400> 27
gaaatgtata ttaatacatt ctcttgaacg atcagaacte traaatcagt tttctataac 60
arcatgtaat acagtcaccg tggctccaag gtcagggaag gcagtgggtt acacatgaag 120
agtgtgggaa gggggctgga aacaaagtat tcttttcctt caaagcttca ttcctcaagg 180
cctcaattca agcagtcatt gtcttgcctt tcaaaagtct gtgtgtgctt calygaaggt 240
atatgtttgt tgccttaatt tgaatttgtg ccagggaaggg tctggagatc taaattcaga 300
gtaagaaaac ctgagctaga actcagycat ttctcttaca gaacttggct lgcagggtag 360
aatgaangga aagaaaactta gaagctcaac aagctgaaga taatcccttc aggcatttcc 420
cataggcctt gcaactctgt tcaactgagag atgttatctt g 461

<210> 28
<211> 541
<212> DNA
<213> Homo sapien

<400> 28
agtctggagt gagcaaaaca gagcaagaaa caarragaag ccaaaagcag aaggctccaa 60
tatgaacaag ataaatctat ctccaaagac atattagaag ttgggaaaat aattcatgtg 120
aactagacaa gtgtgttaag agtgataagt aaaaatgcac tggagacaag tgcaccccca 180
gatctcaggg acctccccc gtctgtcacc tggggagtga gaggacagga tagtgcatgt 240
tctttgtctc tgaattttta gttatatgtg ctgtaatgtt gctctlqagga agccctcgga 300
aaqctctatcc caacatctcc acatcttata ttccacaaat taagctglag tatgtacct 360
aagacgtctc taattgactg ccacttccca actcaggggc ggctgcattt tagtaattgg 420
tcaaatgata cactttttat gatgcttccc aaggtgcctt ggcttctctt ccccaactgac 480
aaatgcccaa gttgagaaaa atgatcataa ttttagcata aaccgagcaa tcggcgaccc 540
c 541

<210> 29
<211> 411
<212> DNA
<213> Homo sapien

<400> 29
tagctgtctt cctcactctt atggcaatga ccccatatct taatggatta agataatgaa 60
agtgtatttc ttacactctg tatctatcac cagaagctga ggtgatagcc cgtttgtcat 120
tgtcatccat attctgggac tcaggcggga actttctgga atattgccag ggagcatggc 180
agaggggcac agtgcatctt gggggaatgc acattggctc agcctgggta atgagtgata 240
tacattacct ctgttcacaa ctcatgccc agcaccagtc acaaggcccc accaaatacc 300
agagcccaag aaatgtatgc ctgttgatat ggttttgcct tgtcccaacc caaatctcat 360
cttgaaattgt aagctcccat aattcccatg tgttgtggga gggacctggt g 411

<210> 30
<211> 511
<212> DNA
<213> Homo sapien

<400> 30
atcatgagga tgttaccaaa gggatggtag taaaccattt gtattcgtct gttttcacac 60
tgctttgaag atactacctg agactgggta atttataaac aaaagagatt taattgactc 120
acagttctgc atggctgaag aggcctcagg aaacttacag tcatgggtga aggcaaagga 180
ggagcaaggc atgtcttaca tgtcagtagg agagagagcg agagcaggag aacctgccac 240
ttataaacca ttcagatctc ataactccct atcatgagna aaacatggag gaaaccaccc 300
tcatgatcca atcacctccc gccagggtccc tccctcgaca cgtggggatt ataattcagg 360
attagagggg cacagagaca aaccatatca tcatlcatga gaaatccacc ctcatagtcn 420
aatcagctcc taccaggccc caactccaac actggggatt gcaattcaac atgagatttg 480
gatggggaca cagattcaaa ccatatcata c 511

<210> 31
<211> 827
<212> DNA
<213> Homo sapien

<400> 31
catggcccttt ctctttagag gccagaggtag ctgccctggc tgggagtgaa gctccaggca 60
ctaccagctt tctgatttt cccgtttggt ccatgtgaag agctaccacg agccccagcc 120
tcacagtgtc cactcaaggg cagcttggtc ctcttgctcc gcagaggcag gctggtgtga 180
ccctgggaac ttgaccggg aacaacaggt ggcccagagt gagtgtggcc tggccctca 240
acctagtgtc cgtctctctc tctcctggag ccagtcctga gtttaaaggc attaatgttt 300
agatacaagc tctttgtggc tggaaaaaca cccctctgct gataaagctc agggggcact 360
gaggaagcag aggccccctg ggggtgccct cctgaagaga gcgtcaggcc atcagctctg 420
tccctctggt gctcccacgt ctgttctcca cctccatct ctgggagcag ctgcacctga 480
ctggccacgc gggggcagtg gaggcacagg ctacagggtgg ccgggctacc tggcacccca 540
tggcttacia agtagagttg gccaglttc cttccacctg aggggagcac tctgactcct 600
aacagtcttc cttgccctgc catcatctgg ggtggctggc tctcaagaaa ggcggggcat 660
gctttctaaa cacagccaca ggaggtttgt agggcatctt ccaggtgggg aaacagtctt 720
agataagtaa ggtgacttgc ctaaggcctc ccagcaccct tgatcttgga gtctcacagc 780
agactgcctg tsaacaactg gaaccgaaaa catgcctcag tataaaa 827

<210> 32
<211> 291
<212> DNA
<213> Homo sapien

<400> 32
ccagaacctc cttctctttg gagaatgggg aggcctcttg gagacacaga gggtttcacc 60
ttggatgacc tctagagaaa ttgcccaga agcccacctt ctggtcccaa cctgcagacc 120
ccacagcagt cagttggtca ggcctgctg tagaaggtca cttggctcca ttgctgctt 180
ccaaccaatg ggcaggagag aaggccttta ttctcgcgc accattctc ctgtaccagc 240
acctccgttt tcagtcagyg ttgtccagca acggtaccgt ttacacagtc a 291

<210> 33
<211> 491
<212> DNA
<213> Homo sapien

<400> 33


```

tgcattgtagt tttatttatg tgttttsgtc tggaaaacca agtgteccag cagcatgact      60
gaacatcact cacttccccct acttgatcta caaggccaac gccgagagcc cagaccagga      120
ttccaaacac actgcacgag aatattgttg atccgctgtc aggttaagtgt ccgtcactga      180
cccaracgct gttacgtggc acatgactgt acagtgccac gtaacagcac tgtacttttc      240
tcccatgaac agttacctgc catgtatcta catgattcag aacattttga acagttaatt      300
ctgacacttg aataatccca tcaaaaaccg taaaatcact ttgatgtttg taacgacaa      360
atagcatcac ttacgacag aatcatctgg aaaaacagaa caacgaatac atacatctta      420
aaaaatgctg ggggtgggca ggcacagctt cagcctgtga ntcccagcac ttggggaggc      480
ttaagcgggt g

```

```

<210> 34
<211> 521
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(521)
<223> n = A,T,C or G

```

```

<400> 34
tggggcggaa agaagccaag gccaaaggagc tgggtgcggca gctgcagctg gaggccgagg      60
agcagaggaa gcagaagaag cggcagagtg tgtcgggctt gcacagatac cttcactttgc      120
tggatggaag tgaaaattac ccgtgttttg tggatgcaga cggatgatgt atttccttcc      180
caccaataac caacagtgag aagacaaagg ttaagaaaac gacttctgat ttgttttttg      240
aagtaacaag tgccaccagt ctgcagattt gcaaggatgt catggatgcc ctcattctga      300
aaatggcaag aaatgaaaaa gtacacttta gaaaataaag aggaaggatc actctcagat      360
actgaagccg atgcagtctc tggacaactt ccagatccca caacgaatcc cagtgcctga      420
aaggacgggc ccttccttct ggtgggtgaa cangtcccgg tggatgatct tgggaangga      480
cctgaangtc gtgtaccccg tccaaggccg accttgccca c

```

```

<210> 35
<211> 161
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(161)
<223> n = A,T,C or G

```

```

<400> 35
tcccgcgctc gcagggcncg tcccactgc cygtccgccc gctcgtctgc tgcgccgcgc      60
cgccgcgctc ccgaccgyca gcatgctgcc gagagtgggc tgcgccgcgc tgcgcgtgcc      120
gccgcgcgcg ctgctgcgcg tctgcccgtc gctgctgctg c

```

```

<210> 36
<211> 341
<212> DNA
<213> Homo sapien

```

```

<400> 36
ggcgggtagg catggaactg agaagaacga agaagctttc agactacgtg gggaagaatg      60
aaaaaaccaa aattatcgcc aagattcagc aaaggggaca gggagctcca gcccgagagc      120
ctattattag cagtgaggag cagaagcagc tgatgctgta ctatcacaga agacaagagg      180

```

```

agctcaagag attggaagaa aatgatgatg atgceatatt aaactcacca tgggcggata      240
acactgcttt gaaaagacat ttccatggag tgaagacat aaagtggaga ccaagatgaa      300
gttcaccagc tgatgacact tccaaagaga ttagctcacc t                          341

```

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<210> 37
<211> 521
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(521)
<223> n = A,T,C or G

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```

<400> 37
tctgaagggt aaatgtttca tctaaatagg gataatgrta aacacctata gcataagatt      60
gtttgagatt aaatgagata atacatgtaa aattatgtgc ctggcataba gcaagattgt      120
tggtgtgtgt gatgatgatg atgatgatga taatatTTTT ctatccnag tgcacaactg      180
cttgaacctt ttgataaatt aatacatgtt tcttgaactg agatcaattt ccccatgttg      240
tctgactgat gaagccctac attttcttct agaggagatg acatttgagc aagatcttaa      300
agaaaatcag atgctttcac ctgaccactg nrtgggtgat ccatggcact ttgtacatct      360
ctccattagc tctcatctca ccagcccatc attattgtat gtgctgcctt ctgaagcttg      420
cagctggcta ccactmgtt gaataaaaat catcctttca taaaatagtg acctctcttt      480
tttatttgca ttcccaaaag ccaagcaccg tgggaggtta g                          521

```

```

<210> 38
<211> 461
<212> DNA
<213> Homo sapien

```

```

<400> 38
tatgaaqaag gaaaaagaag ataatttgtg aaagaaatgg gtccagttac tagtctttga      60
aaagggtcag tctgtagctc ttcttaatga gaataggcag ctttcagttg ctccaggtta      120
gatttcttta gtgggtgtat taatcacagg aaacatctgt ggttccctcc agtctcttct      180
tgggggactt gggcccaact ctcatctcat ttaattagag gaaatagaac tcaaagtaca      240
atttactgtt gtttaacaat gccacaaaga catgggttgg agctatttct tgatttgtgt      300
aaaatgctgt ttttgtgtgc tcataatgtt tccaaaaatt ggggtgctgc caaagagaga      360
tactgttaca gaagccagca agaagacctc tgttcattca cccccccggg gatattcagga      420
attgactcca gtgtgtgcaa atccagtttg gcttatcttc t                          461

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```

<210> 39
<211> 769
<212> DNA
<213> Homo sapien

```

```

<400> 39
tgagggactg attggtttgc tctctgctat tcaattcccc aagcccaact gttcctgcag      60
cgtctctctt ctcatctctt ttagttgtac cctctcttct atctgagacc ttctctctct      120
gatgtgcctt tttcttctct ttgcttttct tgatgtttct ctccagcatgt tctgggtgct      180
tctcatctgc atcatctctt ccagatgctg tagcttctct ctctcttctt tgctctcttt      240
tctttttctt ttttttgggg ggcttgcctc ctgactgcag ttgagggggc ccagggtcct      300
ggcctttgag acgagccagg aaggcctgct cctgggcctc taggcgagca agcttgccct      360
tcatttgtat cccaagacgg gcagccttgt gtgctgttct cccctcacaq gcttgagaca      420
gcattctcat agtcagaatc tttygggact tggaccctct gttgtcttca tcaactgcagc      480
tctccaagtc tttgtttggc ttctctccac ctgaagtcaa tgtagccatc ttcacaaact      540

```

tctgatacag caagttgggc ttgggatgat tataacgggt ggtctcctta gaaaggctcc 600
ttatctgtac tccatcctgc ccagtttcca ctaccaagtt ggccgcagtc ttgttgaaga 660
gctcattcca ccagtggttt gtgaactcct tggcagggtc atgtcctacc ccatgaqtgt 720
cttgcctcag ygtcaccctg agagcctgag tgataccatt ctcttccg 769

<210> 40
<211> 292
<212> DNA
<213> Homo sapien

<400> 40
gacaacatga aataaatcct agaggacaaa attaaactca atagagtgtg gtctagttaa 60
aaactcgaaa aatgagcaag tctggcggga gtggagggaag ggctatacta taaatccaag 120
tgggcctcct gatccttaaca agccatgctc attatacaca tctctgaact ggacatacca 180
cctttacgca ggaacacagg cttggaactt ctaagggaaa ttaacatgca ccacccacat 240
ctaaccctacc tgccgggtag gtaccatccc tgcttcgctg aaatcagtcg tc 292

<210> 41
<211> 406
<212> DNA
<213> Homo sapien

<400> 41
ttggaattaa ataaacctgg aacagggaag gtgaaagtgg gagtgaagtg tcttccatatt 60
ctataccttt gtgcacagtt gaatgggaac tgtttgggtt tagggcatct tagagtgtat 120
tgatgaaaaa agcagacagg aactgggtgg aggtcaagtg gggaagtgtg tgaatgtgga 180
ataacttacc tttgtgctcc acttaaacca gatgtgttgc agctttcctg acatgcaagg 240
atctacttta attccacact ctcatataa aattgaataa aagggaatgt tttggcacct 300
gatataatct gccaggctat gtgacagtag gaaggaaagg tttccctcaa caagcccaat 360
gcactggtct gactttataa attatttaat aaaatgaact attatc 406

<210> 42
<211> 381
<212> DNA
<213> Homo sapien

<400> 42
aaactcgacc tgcaacaggg acatgaattt actgcarggt ctgagcaagc tcagccccctc 60
tacctcaggg ccccacagcc atgactacct ccccaggag cgggagggtg aagggggctc 120
gtctctgcaa gtggagccag agtggaggaa tgagctctga agacacagca cccagccttc 180
tcgcaccagc caagccttaa ctgcctgctt gacctgaac cagaacccag ctgaactgcc 240
cctccaaggg acaggaaggc tgggggaggg agtttacaac ccaagccatt ccacccccctc 300
ccctgctggg gagaatgaca catcaagctg ctaacaattg ggggaagggg aagggaagaa 360
actctgaaaa caaaatcttg t 381

<210> 43
<211> 451
<212> DNA
<213> Homo sapien

<400> 43
catgcgtttc accactgttg gccaggctgg tctcgaactc ctggcctcaa gcaatccacc 60
cgctcagcc tccaaaagtg ctgggattac agatgtgagc catggcacca tgccaaaagg 120
ctatatctct ggctctgtgt ttccgagact gcttttaate ccaacttctc tacatttga 180
ttaaaaaata ttttattcat ggtcaatctg gaacataatt actgcattct aagtttccac 240

tgatgtatat agaaggctaa aggcacaatt tttatcaaat ctagtagagt aaccaaacat 300
aaaatcatta attactttca acttataaac taattgacat tctcctaaaag agctgttttc 360
aatcctgata ggttctttat tttttcaaaa tatatttgc atgggatgct aatttgcaat 420
aaggcgcata atgagaatac cccaaactgg a 451

<210> 44
<211> 521
<212> DNA
<213> Homo sapien

<400> 44
gttggacccc cagggactgg aaagacactt cttgcccgag ctgtggcggg agaagctgat 60
gttccttttt attatgcttc tggatccgaa tttyatgaga tgtttgtggg tgtgggagcc 120
agccgtatca gaaatctttt tagggaagca aaggcgaatg ctccttgtgt tatatttatt 180
gatgaattag attctgttgg tgggaagaga attgaatctc caatgcaccc atattcaagg 240
cagaccataa atcaacttct tgcctgaaatg gatggtttta aacccaatga aaggattatc 300
ataataggag ccacaaactt cccagaggca ttagataatg ccttaatacc gtcttggtcg 360
ttttgacatg caagttagag ttccaaggcc agatgtaaaa ggtcgaacag aaattttgaa 420
atggtatctc aataaataa agtttgcata atcccgttga tccagaaatt atagcctcga 480
ggtactggtg gcttttcgga aagcagagtt gggagaatct t 521

<210> 45
<211> 585
<212> DNA
<213> Homo sapien

<400> 45
gcctacaaca tccagaaaga gtctaccctg caccctggtgc tscgtctcag aggtgggatg 60
caqatcttcg tgaagaccct gactggttaag accatcactc tcgaagtggg gccgagtgac 120
accatygaga acgtcaaagc aaagatccar gacaagggaag gcrtycctcc tgaccagcag 180
aggttgatct ttgccggaaa gcagctggaa gatggdcgca cctgtctga ctacaacatc 240
cagaaagagt cyaccctgca cctggtgctc cgtctcagag gtgggatgca ratcttcgtg 300
aagaccctga ctggttaagc catcaccctc gaggtggagc ccagtgcacac catcgagaat 360
gtcaaggcaa agatccaaga taagggaaggc atccctcctg atcagcagag gttgatcttc 420
gctgggaaac agctggaaaga tggacgcacc ctgtctgaat acaacatcca gaaagagtcc 480
actctgcact tggctcctgc cttgaggggg ggtgtctaaag ttcccccctt taagggttcm 540
acaaatttca ttgcacttcc ctttcaataa agttgtttga ttccc 585

<210> 46
<211> 481
<212> DNA
<213> Homo sapien

<400> 46
gaactgggac ctgagcccaa gtcattgcctt gtgtccgcat ctgccgtgtc acctctgtkc 60
ctgccccctc cccctccctc ctggtcttct gagccagcac catctccaaa tagcctattc 120
cttctctgaa atcacacaca catgcggggc acacatacct gctgccctgg agatggggaa 180
gtaggagaga tgaatagagg cccatacatt gtacagaagg aggggcaggt gcagataaaa 240
gcagcagacc cagcggcagc tgaggtgcat ggagcacggt tggggccggc attgggctga 300
gcacctgatg ggctcatctc cgtgaatcct cgaggcagcg ccacagcaga ggagttaagt 360
ggcacctggg ccgagcagag caggagactg agggctcagag tggaggctaa gctgccctgg 420
aactcctcaa tcttgcttgc cccctagtat gaagccccct tcttgccccct acaattcctg 480
a 481

<210> 47

<211> 461
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(461)
<223> n = A,T,C or G

<400> 47
atggatctta ctttgccacc caggttgag tgcagtgtg caatcttggc tcactgcagc 60
cttaacctcc caggtcaca gctatctcct gccaaagcct tccacatagc tgggactaca 120
ggtacacngc caccacaccc agctaaaatt tttgtatttt ttgtagagac gggatctcgc 180
cacgttgccc aggttggtcc catcctgacc tcaagcagat ctgcccacct cagcccccca 240
acgtgctagg attanaggng tgagccaccg caccacagcct ttgtttttgct tttaatggaa 300
tcaccagttc cctcctgtgt ctcagcagca gctgtgagaa atgcttttga tctgtgacct 360
ttatgaaggg gaacttccat gctgaatgag ggtaggatta catgctcttg tttcccgggg 420
gtcaagaaag cctcagactc cagcatgata agcaggggtga g 461

<210> 48
<211> 571
<212> DNA
<213> Homo sapien

<400> 48
ataggggctt taaggaggga attcaggttc aatgaggtcg taaggccagg gctcttatcc 60
agtaagactg ggttccttag atgagaaaga gacacccgag gtcttttctc ctgccgtgtg 120
aggatgcac aagaaggcgg cctctgcaa gcgaaggaga ggccgcacca gaaacccaca 180
ccttcattct ggacttgca cctctagaac tgagaaaata actgtctgtt ggttaagcca 240
cccagtttgt agtattctct tatggctcc taagcagact aacaaacaaa cacccaaat 300
taactgatgg cttcgtgttc ttctgtaaaa attgctatga gagaactttt cactcactgt 360
tttgcagttt ctccctcagt ccttggtctt ttcttctcac ataattccaa tttcaattta 420
taqtctatgg ccaggcaga gtcattcacc acggcatctc ctgagctaaa ccagcacctg 480
ctctgtctac ttcttgactg gctgtctacc atcagccctc ttgcagagat ttcatttctc 540
cccgtgccag gtacttccag caccaagctc a 571

<210> 49
<211> 511
<212> DNA
<213> Homo sapien

<400> 49
ggataatgaa gttgttttat ttagcttggg aaaaaaggca ttttctctta ttttcttata 60
caacaaatat ccccaaaata aagcaagcat atatatcttg aatgtgtaat aatccagtga 120
taaacaagag cagtacttta aaagaaaaaa aaatatgtat ttctgtcagg ttaaaatgag 180
aatcaaaaac atttactctg ctaactcatt attttttgct ttctttttgg ttaagagagg 240
caatgcaata cactgaaaaa ggtttttatc ttatctggca ttggaattag acatattcaa 300
accccagccc ccatttccaa actttaagac cacaacaag taatttactt ttctgaacat 360
tggttttttc tggaaaaagg gaattataaa atagactttg cagactctta tgagattaaa 420
taagataatg tatgaaattc ttctttcttt tttaactctt tttctttttt gagatggagt 480
ctcaccocgt caccacaggt ggagtacagt g 511

<210> 50
<211> 561
<212> DNA

<213> Homo sapien

<400> 50

ccactgcact	ccagcctggg	tgaacggagt	agactctctc	tcaaaaaaac	aaacaaacaa	60
acaaacaaaa	aactgaaaag	gaaatagagt	tcctcttttc	tcataatga	atatattatt	120
tcaacagatt	gttgatcacc	taccatattg	ttggtattgt	tctaattgct	ggggatacag	180
caagagggtc	tgcagaactt	catggagcat	gaaagtaaat	aaacaaagtt	aatttcaagg	240
ccaggcatgg	ttgtccacac	ctttagtccc	agcacttttg	gaggtctagg	cagggtggatc	300
acttggggcc	aggagttcaa	ggctgcagt	agccaaagatt	gtgccactac	tctccaggct	360
gggcaacaga	gcaagacctt	gtctcagggg	gaacaaaaag	ttaatttcag	attttgttaa	420
gtgctgtaaa	ggaagtaaat	aggttgatat	tcaagagagc	acctgaaggc	caggcgtggt	480
ggctcacgcc	tgtggtctaa	cgctttggga	agcccgagcg	ggcggatcac	aaggtcagga	540
gaattttggc	caggcatggt	g				561

<210> 51

<211> 451

<212> DNA

<213> Homo sapien

<400> 51

agaatccatt	tattgggttt	taactagtt	acacnaactq	aatcagtttg	gcactacttt	60
atacagggat	tacgcctgtg	tatgccgaca	cttaataact	gtaccaggac	cactgctgtg	120
cttaggtctg	tattcagtc	ttcagcatgt	agatactaaa	aataactgt	agtgttcctt	180
taaggaagac	tgtacaggg	gtgttgcaag	atgacattca	csaattttgt	aattatttca	240
accagaaga	tacctttcac	tctataaact	tgtcataggc	aaacatgtgg	tgttagcatt	300
gagagatgca	cacaaaaatg	ttacataaaa	gttcagacat	tctaattgata	agtgaactga	360
aaaaaaaaaa	aacccacat	ctcaattttt	gtaacaagat	aaaganaata	atttaaaaaa	420
acaaaaaatg	gcattcagtg	ggtacaaagc	c			451

<210> 52

<211> 682

<212> DNA

<213> Homo sapien

<400> 52

caaatattta	atataaatct	ttgaacaag	ttcagakgan	ataaaaaatca	aagtttgcaa	60
aaacgtgaag	atttaactta	ttgtcaata	ttcctcattg	ccccaaatca	gtattttttt	120
tattttctatg	caaaaagtatg	ccttcaaaact	gcttaaatga	tatatqatat	gatacacaaa	180
ccagttttca	aatagtaaaag	ccagtcattct	tgcaattgta	agaaataggt	aaaagattat	240
aagacacctt	acacacacac	acacacacac	acacacacgt	gtgcaccgcc	aatgacaaaa	300
aacaatttgg	cctctcctaa	aataagaaca	tgaagacctt	taattgtctg	caggaggga	360
cactgtgtca	cccctcccta	caatccaggt	agtttccttt	aatccaatag	caaatctggg	420
cataattttag	aggagtgtatt	ctgacagcca	csgttgaaat	cctgtgggga	accattcatg	480
tcccccact	ggtgcctga	aaaaatgcca	ataatttttc	gtcccaactt	ctgctgctgt	540
ctcttcacac	tcctcacata	gacccagac	ccgctggccc	ctggtggggc	atcgatttgc	600
tggtagagca	agtcataaggt	ctcgtctttg	acgtcacaga	agcgatacac	caaatgtcct	660
ggtcgtcat	tgtcataacc	ag				682

<210> 53

<211> 311

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(311)
<223> n = A,T,C or G

<400> 53

tttgacttta gtaggggtct gaactattta ttttactttg ccmgtaatat ttaraccyta	60
tatatctttc attatgccat cttatcttct aatgbcaagg gaacagwtgc taamctggct	120
tctgcattwa tcacattaaa aatggctttc ttggaaaatc ttcttgatat gaataaagga	180
ctctttavag ccatcattta aagcmggnnt ctctccaaca cgagtctgct sasgggggk	240
gagctgtgaa ctctggctga aggctttccc atacacactg caatgacmtg gtttctgacc	300
agbgtgagtt a	311

<210> 54

<211> 561

<212> DNA

<213> Homo sapien

<400> 54

agagaagccc cataaatgca atcagtggtg gaaggccttc agtcagagct caagcctttt	60
cctccatcat cgggttcata ctggagagaa accctatgta tgtaatgaat gcggcagagc	120
cttttgcttt aactctcctc ttactgaaca cgttaaggatt cacacaggag aaaaaacctc	180
tggttgtaat gagtgcggca aagccttttg tgggagttcc actcttgctc agcatcgaag	240
agttcacact ggggagaagc cctaccagtg cgttgaatgt gggaaagctt tcagccagag	300
ctcccagctc accctacatc agccgaqttc acactggaga gaagccctat gactgtggtg	360
actgtgggaa ggccttcagc cggaggtcaa cctcatttca gcatcagaaa gttcacagcg	420
gagagactcg taagtgcaga aaacatgggtc cagcctttgt tcatggctcc agcctcacag	480
cagatggaca gattcccact ggagagaagc acggcagaac ctttaaccat ggtgcaaatc	540
tcattctgct ctggacagtt c	561

<210> 55

<211> 811

<212> DNA

<213> Homo sapien

<400> 55

gagacaggtt ctcactttgt cccccaggct ggaatgcagt ggtgcgatct tacgtagctc	60
actgcagccc tgacctcctg gactcaaaaca attctcctgc ctccagccctg caagtagctg	120
ggactgtggg tgcacatgct catgcctggc caacttttgt agtttttgta aagatggggg	180
tttgccatgt tgcacatgct ggtcttgaa ccttgagctc aaacgatctg cccacctcgg	240
cctcccagaa tgttgggatt acaggggtaa accaccacgc ctggcccatc taggggtatc	300
ttagcatcca ctgctcact gagattaatc ataagagatg ataagcactg gaagaaaaaa	360
atttttacta ggctttggat atttttttcc tttttcagct ttatacagag gattggatct	420
ttagttttcc tttaactgat aataaaacat tgaaaggaaa taagtttacc tgagattcac	480
agagataacc ggcacactc ccttgctcaa ttccagtcct taccacatca attattttca	540
gaggtgcagg ataaaggcct ttagtctgct ttgcacttt ttcttcactc tttttgtaaa	600
cctgttgccg gacaaatgga attgacagcg tatgcatga ctattccatt tgtcaggcat	660
acgtgtcaaa tttttccacc aatcccttgt ctctcttttg agagatcttc ttatcagcta	720
gtcctttggc aaaagtatt gcaacttctt ctaggatatt tattgtccgt tccactggty	780
gaacccctgg gaccaggact aaaacctcca g	811

<210> 56

<211> 591

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature
 <222> (1)...(591)
 <223> n = A,T,C or G

<400> 56
 atctcatata tatatttctt cctgacttta ttgcttgct tctgncacgc atttaaaaaa 60
 tcacagagac caaaaatagag cggctttctg gtggaacgca tggcagtcac aggacaaaat 120
 acaaaactag ggggctctgt cttctcatac atcatacaat ttccaagtat tttttttatg 180
 tacaaagagc tactctatct gaaaaaaaat taaaaaataa atgagacaag atagtttatg 240
 catcctagga agaaagaatg ggaagaaaga acggggcagt tgggtacaga ttctgtctcc 300
 ctgttcccag ggaccactac ctctctgcca ctgagttccc ccacagcctc acccatcatg 360
 tcacagggca agtgccaggg taggtgggga ccagtggaga caggaaaccag caacatactt 420
 tggcctggaa gataaggaga aagtctcaga aacacactgg tgggaagcaa tcccacnggc 480
 cgtgcccacn gagcttccca cctgctgctg gctccctggg tggctttggg aacagcttgg 540
 gcaggccctt ttgggtgggg nccaaactggg cctttggggc cgtgtgggaa g 591

<210> 57
 <211> 481
 <212> DNA
 <213> Homo sapien

<400> 57
 aaacattgag atggaatgat aggggtttccc agaatcaggt ccatatttta actaaatgaa 60
 aattatgatt tatagccttc tcaaatacct gccatacttg atatctcaac cagagctaat 120
 tttaaccttt taaaaattaa ataagcaagt aactggatcc acaatttata ntacctgtca 180
 attttttctg tattaaacct ctatcatagt ttaagcctat tagggtaact aatccttaca 240
 aataaacagg tttaaatca cctcaatagg caactgacct tctgggtttc ttctttgact 300
 aaacaatctg aatgcttaaq attttccact ttgggtgcta gcagtacaca gtgttacact 360
 ctgtattcca gacttcttaa attatagaaa aaggaaatga cactttttgt attctttctg 420
 agcaggggccg ggaggcaaca tcacttacca ttgtagggac ttgtatgcat ggactacttt 480
 a 481

<210> 58
 <211> 141
 <212> DNA
 <213> Homo sapien

<400> 58
 actctgtcgc ccaggctgga gccabtggm gcgatctega ctccctgcaa gctmcgctc 60
 acaggwtcat gccattctcc tgcctcagca tctggagttag ctgggactac aggcgccagc 120
 caccatgcc agctaatttt t 141

<210> 59
 <211> 191
 <212> DNA
 <213> Homo sapien

<400> 59
 accttaaaaga cataggagaa ttatactgg gagagaaagc ttacaaatgt aaggtttctg 60
 acaagacttg ggagtgattc acacctggaa caacatactg gacttcacac tggabagaaa 120
 ccttacaagt gtaatgagtg tggcaaaagc ttgggcaagc agtcaacact tattcaccat 180
 caggcaattc a 191

<210> 60
 <211> 480

<212> DNA

<213> Homo sapien

<400> 60

agtcaggatc atgatggctc aqtttccac agcgatgaat ggagggccaa atatgtgggc	60
tattacatct gaagaacgta ctaagcatga taaacagttt gataacctca aaccttcagg	120
aggttacata acagggtgac aagcccgtac ttttttcta cagtcaggtc tgcgggcccc	180
ggttttagct gaaataatgg ccttatcaga tctgaacaag gatgggaaga tggaccagca	240
agagttctct atagctatga aactcatcaa gttaaagttg cagggccaac agctgcctgt	300
agtcctccct cctatcatga aacaaccccc tatgttctct ccactaatct ctgctcgttl	360
tgggatggga agcatgcccc atctgtccat tcatcagcca ttgcctccag ttgcacctat	420
agcaacaccc ttgtcttctg ctacttcagg gaccagtatt cctccctaata gatgcctgct	480

<210> 61

<211> 381

<212> DNA

<213> Homo sapien

<400> 61

ctttcgattt ccttcaattt gtcacgtttg attttatgaa gttgttcaag ggctaactgc	60
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agcttagatg cagtttcttt ttcaagagca tctaattggt ctttaagtct ttggcataat	180
tcttcttttt ctgatgactt tctatgaagt aaactgatcc ctgaatcagg tgtgttactg	240
agctgcatgt ttttaattct ttctgttaat agctgcttct cagggaccag atagataagc	300
ttattttgat attccttaag ctcttggtga agttgttcga tttccataat ttccaggtca	360
cactggttat cccaaacttc t	381

<210> 62

<211> 906

<212> DNA

<213> Homo sapien

<400> 62

gtggagggtga aacggagqca aqaaaggggg ctacctcagg agcgagggac aaaggggggc	60
tgaggcacct aggcgcggc accccggcga caggaaagccg tectgaaccg ggctacggg	120
taggggaagg gcccgctag tctcgcagg gccccagagc tggagtcggc tccacagccc	180
cgggccgtcg gctttctcaet tcttgyacct ccccgggccc cgggcctgag gactggctcg	240
gcggagggag aagaggaaac agacttgagc agctccccgt tgtctcgcac ctccactgcc	300
gaggaaactct catttcttcc ctccgtccct cacccccac ctcatgtaga aaggtgctga	360
agcgtccgga gggaaagaaga acctgggcta ccgtcctggc ctccccmccc ccttcccggg	420
gcctcttggt gggcgtggag ttggggttgg gggggttggg gggggttctt ttttgagtg	480
ctggggaact tttttccctt ctccaggcca ggggaaaggg aatgccaat tcagagagac	540
atgggggcaa gaaggacggg agtgaggag ctcttggaac ttgcagccg tcatcgggag	600
gcggcagctc taacagcaga gacgtcacc gcttggtatc gaagcacaag cggcataagt	660
ccaaacactc caaagacatg gggttggtga ccccgaagc agcatccctg ggcacagtta	720
tcaaaccttt ggtggagtat gatgatca gctctgattc cgacaccttc tccgatgaca	780
tggccttcaa actagaccga agggagaacg acgaacgtcg tggatcagat cggagcgacc	840
gcctgcacaa acatcgtcac caccagcaca ggcgttcccg ggacttacta aaagctaaac	900
agaccg	906

<210> 63

<211> 491

<212> DNA

<213> Homo sapien

<400> 63

gacatgtttg	cctgcagggg	accagagaca	atgggattag	ccaqtgctca	ctgttcttta	60
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ggttgggggc	ccccggaagc	acggtccgga	tcctccctgg	catcagcgta	gacccgctgc	180
tcaggcttgg	ggtacaaaac	tcattgctctg	tactgttttg	gccccatgcg	gtgagaggaa	240
aacctagaaa	aagatttggt	gtgctaagga	atcagctgcc	ccctcatcct	ccgcattcaa	300
tgctggtgac	aacatattcc	ctctcccagg	acacagaactc	ggtgactcca	cactgggctg	360
agtggccctc	ggaggctcgt	ggcctaaggc	agggctccgt	aaggctgata	ggctgaactg	420
ggtgggtgtg	gggtttctga	cccttcgctt	cccatcccat	aaccgctgtc	aatgagctca	480
cactgtgggc	a					491

<210> 64

<211> 511

<212> DNA

<213> Homo sapien

<400> 64

gatggctgg	tcgttgctaa	tgtgcctgct	gggatggagc	acttccctct	gtgagccag	60
gggacccgcc	tgccctggga	gcttggggca	aggagggaag	agtgalacca	ggaagggtgg	120
gctgcagcca	ggggccagag	tcagttcagg	gagtggctct	cgccctccaa	agctccctccg	180
gggactgctc	aggagtgatg	gtgcccctga	gtttgcccc	acttccctgg	ccacccctgga	240
aggtgcctgg	ctgctccagg	cctctaggct	gggctgatgg	gtttctccag	gacacaagta	300
tcattaaagc	caccctctcc	tcagcttgct	agggccgaca	tgtgggacag	gctgtgctca	360
caacccctcc	gcctgccttg	ccctccatca	ggaggaycca	gtgggaacct	cggaagctc	420
ccagcatctc	agcagccctc	aaaagtctgc	ctggggcaag	ctctggttct	cctgactgga	480
ggtcatctgg	gcttggcctg	ctctctctcg	c			511

<210> 65

<211> 394

<212> DNA

<213> Homo sapien

<400> 65

taaaaaagt	taacaaaggt	ttatttagac	ttttctcatg	ccccagatc	caggatgtct	60
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gcttaactga	aatagcgtcc	atccaaaagt	gggtttaagg	taaaactacc	tgacgataat	180
ggcggggatc	ctgcagtttg	gactgcttgc	cggttttgct	cagggttccg	ggtctgttct	240
tggcactcat	ggggacagcc	atcctgctcg	tctgtggggc	ccgcttgag	cccttacgtg	300
aagctgaagg	tatcgaccct	agggggctct	agggcagctg	gaccttcata	cggaactaac	360
aagggtcggg	gagaggcctc	ttgggctatg	tggg			394

<210> 66

<211> 359

<212> DNA

<213> Homo sapien

<400> 66

caagcgttcc	tttatggatg	taaattcaaa	cagtcattgt	gagccatccc	gggctgacag	60
tcacgttwaa	gacactaggt	cgggcgcac	agtccacccc	aaggagaaga	agaatttggg	120
atthttccat	gaagatgtac	ggaaatctga	tgttgaaat	gaaaatggcc	cccaaatgga	180
attccaaaa	gttaccacag	gggctgtaag	acctagtac	cctcctaagt	gggaaagagg	240
aatcgagaat	agtattttctg	atgcatcaag	aacatcagaa	tataaaactg	agatcataat	300
gaacgaaaa	tccatatcca	atatgagttt	actcagagac	agtagaaact	attcccagg	359

<210> 67

<211> 450

<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(450)
<223> n = A,T,C or G

<400> 67
taggaataac aaatgtttat tcagaaatgg ataagtaata cataatcacc ctccatctct 60
taatgcccc tccctctcct ctgcacagga gacacagatg ggtaacatag aggcattggga 120
agtggaggag gacacaggac tagccaccca cctctctctc ccggtctccc aagatgactg 180
cttatagagt ggaggaggca aacagggtccc ctcaatgtac cagatggtca cctatagcac 240
cagctccaga tggccacgtg gttgcagctg gactcaatga aactctgtga caaccagaag 300
atacctgctt tgggatgaga gggaggataa agccatgcag ggaggatatt taccatccct 360
accctaagca cagtgcgaag agtgagcccc cggctcccag tacctgaaaa accaaggcct 420
actgnetttt ggatgctctc ttgggccacg 450

<210> 68
<211> 511
<212> DNA
<213> Homo sapien

<400> 68
aagcctcctg ccttggaat ctggagcccc ttggagctga gctggacggg gcaggaggag 60
gctgagaggc aagaccgtct cctcctgctt gcagctgctt ccccagcagc cactgctggg 120
cacagcagaa acgccagcag agaaaatggg agccgagagt ccttagccct ggagctgagg 180
ctgctctcgg gctgacccgc tggctgtacg tggccagaac tggggttggc atctggcatc 240
catttgaggc cagggtggag gaaaggagg ccaacagagg aaaacctatt cctgctgtga 300
caacacagcc cttgtccac gcagcctaag tgcagggagc gtgatgaagt caggcagcca 360
gtcggggagg acgaggtaac tcagcagcaa tgtcaccttg tagcctatgc gctcaatggc 420
ccggaggggc aqcaaccccc cgcacacgtc agccaacagc agtgcctctg caggcaccaa 480
gagagcgatg atggactga gcgcgtgtt c 511

<210> 69
<211> 511
<212> DNA
<213> Homo sapien

<400> 69
gtttggcaga agacatgttt aataacatth tcatatttaa aaaatacagc aacaattctc 60
tatctgtcca ccatcttgcc ttgcccttcc tggggctgag gcagacaaag gaaaggtaat 120
gaggttaggg cccccaggcg ggctaagtgc tattggcctg ctctgctca aagagagcca 180
tagccagctg ggcacggccc cctagccctt ccaggttgct gaggcggcag cgggtgtaga 240
gtttctcact gaggcgtggg ctgcagtctc gcaggagaaa cttctgcacc agccctggct 300
ctacggcccc aaagaggtgg agccctgaga accggaggaa aacatccatc acctccagcc 360
cctccagggc ttctctctct tcttgccctg ccagttcacc tggcagccgg gctcggggcg 420
ccaggtagtc agcgtttag aagcagccct ccgcaagaag ctgcgggtca aatctccccg 480
ctataggagc cccccgggag gggtcagcac c 511

<210> 70
<211> 511
<212> DNA
<213> Homo sapien

<400> 70

caagttgaac	gtcaggcttg	gcagagggtg	agtgtagatg	aaaacaaagg	tgtgattatg	60
aagaggatgt	gagtcctttg	ggtgtaggag	agaaaggctg	ttgagcttct	atttcaagat	120
acttttacct	gtgcaaaaag	cacattttcc	acctccttct	catggcattt	gtgtaaggty	180
agtatgattc	ctattccatc	tgcattttag	aggtgaagaa	taacgtacaa	gggattcagt	240
gattagcaag	ggaccctcca	ctaagtgttg	atggagttag	gacagagctc	agctgtttga	300
atctcagagc	ccaggcagct	ggagctgggt	aggatcctgg	agctggcact	aatgtgaggt	360
gcattccctc	caacccaggc	tcagatccgg	aacctgaccg	tgctgacccc	cgaaggggag	420
gcagggtctg	gctggcccgt	tgggctccct	gctcctttca	caccacactc	tcgctttgag	480
gtgctgggct	gggactactt	cacagagcag	c			511

<210> 71

<211> 511

<212> DNA

<213> Homo sapien

<400> 71

tggcctgggc	aggattggga	gagaggtagc	taccgggatg	cagtcctttg	ggatgaagac	60
tatagggtat	gaccccatca	tttcccaga	ggtctcgccc	tcctttgggtg	ttcagcagct	120
gccccgggag	gagatctggc	ctctcttgga	tttcatcact	gtgcacactc	ctctcctgcc	180
ctccacgaca	ggcttgctga	atgacaacac	ctttgcccg	tgcagaagg	gggtgcgtgt	240
ggtgaactgt	gcccgtggag	ggatcgtgga	cgaaggcgcc	ctgctccggg	ccctgcagtc	300
tggccagctg	gccggggctg	cactggacgt	gtttacggaa	gagccgccac	gggaccgggc	360
cttgggtggc	catgagaatg	tcctcagctg	tccccacctg	ggtgccagca	ccaaggaggc	420
tcagagccgc	tgtggggagg	aaattgctgt	tcagttcgtg	gacatggtga	agggqaaatc	480
tctcacgggg	gttgtgaatg	cccaggccct	t			511

<210> 72

<211> 2017

<212> DNA

<213> Homo sapien

<400> 72

agccagatgg	ctgagagctg	caagaagaag	tcaggatcat	gatggctcag	tttcccacag	60
cgatgaatgg	agggccaaat	atgtgggcta	ttacatctga	agaacgtact	aagcatgata	120
aacagtttga	taacctcaaa	ccttcaggag	gttacataac	aggtgatcaa	gcccgtactt	180
ttttcttaca	gtcaggctctg	ccggccccgg	ttttagctga	aatatgggco	ttatcagatc	240
tgaacaaggc	tgggaagatg	gaccagcaag	agttctctat	agctatgaaa	ctcatcaagt	300
taaaagttga	gggccaacag	ctgcctgtag	tcctccctcc	tatcatgaaa	caacccccca	360
tgttctctcc	actaatctct	gtctgttttg	ggatgggaag	catgcccaat	ctgtccattc	420
atcagccatt	gcttcagttt	gcacctatag	caacaccctt	gtcttctgct	acttcaggga	480
ccagtattcc	tcctctaatt	atgcctgtct	ccctagtgcc	ttctgttagt	acatcctcat	540
taccaaattg	aactgccagt	ctcattcagc	ctttatccat	tccttattct	tcttcaacat	600
tgcctcatgc	atcatcttac	agcctgatga	tgggaggatt	tgggtggtgt	agtatccaga	660
agggccagtc	tctgattgat	ttaggatcta	gtagctcaac	ttcctcaact	gcttcctctt	720
cagggaactc	acctaaagaca	gggacctcag	agtgggcagt	tcctcagcct	tcaagattaa	780
agtatcgcca	aaaatttaat	agtctagaca	aaggcatgag	cggatacctc	tcaggttttc	840
aagctagaaa	tgccttctct	cagtcaaatc	tccttcaaac	tcagctagct	actatttggc	900
ctctggtctg	catcgatggt	gacggacagt	tgaaggctga	aqaatttatt	ctggcgatgc	960
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tccctccatc	tttcagaggg	ggaaagcaag	ttgattctgt	taatggaaact	ctgccttcat	1080
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agcagcagca	gagggaggct	gaacgcataag	cccagaaaag	gaagggaagag	tgggagcggg	1260
aacagagaga	actgcaagag	caagaatgga	agaagcagct	ggagtgggag	aaacgcttgg	1320

agaaaacagag	agagctggag	agacagcggg	aggaagagag	gagaaaggag	ataganaagac	1380
gagaggcagc	aaaacaggag	cttgagagac	aacgccgttt	agaatgggaa	agactccgtc	1440
ggcaggagct	gctcagtcag	aagaccaggg	aacaagaaga	cattgtcagg	ctgagctcca	1500
gaaagaaaa	tctccacctg	gaactggaag	cagtgaatgg	aaaacatcag	cagatctcag	1560
gcagactaca	agatgtccaa	atcagaaaag	aaacacaaaa	gactgagcta	gaagttttgg	1620
ataaacayty	tgacctggaa	attatggaaa	tcaaacaaact	tcaacaaggg	cttaagggaat	1680
atcaaaataa	gcttatctat	ctggtcctcg	agaagcagct	attaaacgaa	agaattaaaa	1740
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aaaagggaaga	attatgccaa	agacttaaa	aacaattaga	tgctcttgaa	aaagaaactg	1860
catctaaagct	ctcagaaatg	gatttcattta	acaatcagct	gaaqgaactc	agagaaagct	1920
ataatacaca	gcagttagcc	cttgaacaac	ttcataaaat	caaacgtgac	aaattgaagg	1980
aaatcgaaa	aaaaagatta	gagcaaaaaa	aaaaaaa			2017

<210> 73

<211> 414

<212> DNA

<213> Homo sapien

<400> 73

atggcagtg	cattcaccat	catgggaacc	accttcctct	ttcttcagga	ttctctgtag	60
tggaagagag	caccagctgt	tggtctgaaa	acatctgaaa	gtaggagaaa	gaacctaaaa	120
ttaatcagtat	ctcagagggc	tctaagggtc	caagaagtct	cactggacat	ttaagtcca	180
acaaaggcat	acttcggaa	tcgccaaagtc	aaaactttct	aacttctgtc	tctctcagag	240
acaagtgaga	ctcaagagtc	tactgcttta	gtggcaacta	cagaaaaactg	gtgttaccca	300
gaaaaacagg	agcaattaga	aatggttcca	atatttcaaa	gctccgcaan	caggatgtgc	360
ttctctttgc	ccatttaggg	ttctctctct	ttctcttctc	tttattaaac	acta	414

<210> 74

<211> 1567

<212> DNA

<213> Homo sapien

<400> 74

atatctagaa	gtctggagtg	agcaaacaa	agcaagaaa	aaaaagnagc	caaaagcaga	60
aggctccaat	atgaacaaga	taaatctatc	ttcaaaagaca	tattagaagt	tggaataata	120
attcatgtga	actagacaag	tgtgttaaga	gtgataagta	aaatgcacgt	ggagacaagt	180
gcacccccag	atctcaggga	cctccccctg	cctgtcacct	ggggagttag	aggacagcat	240
agtgcagtgt	ctttgtctct	gaatttttag	ttatatgtgc	tgtaatgttg	ctctgaggaa	300
gccccctggaa	agtcctatccc	aacatattcca	catcttatat	tccacaaaatt	aagctgtagt	360
atgtacccta	agacgctgct	aattgactgc	cacttcgcaa	ctcagggggc	gctgcatttt	420
agtaatgggt	caaatgatto	actttttatg	atgcttccaa	aggtgccttg	gcttctcttc	480
ccaaactgaca	aatgccaaag	ttgagaaaaa	tgatcataat	tttagcataa	acagagcagt	540
cggcgacacc	gattttataa	ataaaactgag	caccttcttt	ttaaacaaac	aaatgcgggt	600
ttattttctca	gatgatgttc	atccgtgaat	ggtccaggga	aggacctttc	accttgacta	660
tatggcatta	tgtcatnaca	agctctgagg	cttctctctt	ccatctcgog	tggaacagcta	720
agacctcagt	tttcaatagc	atctagagca	gtgggactca	gctgggggta	tttcgcccc	780
catctccggg	ggaatgtctg	aaagacaattt	tgttacctca	atgagggagt	ggaggaggat	840
acagtgcctac	taccaactag	tggaataaag	ccagggatgc	tgtcacaact	cctaccatgt	900
acaggacgtc	tccccattac	aactacccaa	tccgaagtgt	caactgtgtc	aggactaaga	960
aaccttggtt	ttgaqlagaa	aagggccttg	aaagagggga	gccaaacaaat	ctgtctgctt	1020
cctcacatta	gtcattggca	aataagcatt	ctgtctcttt	ggctgctgoc	tcagcacaga	1080
gagccagaa	tctatcgggc	accaggataa	catctctcag	tgaacagagt	tgacaaggcc	1140
tatgggaaat	gcctgatggg	attatcttca	gcttgttgag	cttctaagtt	tctttccctt	1200
cattctaccc	tgcaagccaa	gttctgtaag	agaaatgcct	gagttctagc	tcagggtttc	1260
ttactctgaa	tttagatctc	cagacccttc	ctggccacaa	ttcaaatat	ggcaacaaac	1320

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atataccttc catgaagcac acacagactt ttgaaagcaa ggacaatgac tqcttgaatt 1380
gaggccttga ggaatgaagc ttgaaaggaa aagaatactt tgtttccagc ccccttccca 1440
cactcttcat gtgttaacca ctgecttccr ggaccttga gccacgggtga ctgtattaca 1500
tgttgttata gaaaactgat tttagagttc tgatcgttca agagaatgat taaatataca 1560
tttcta 1567

```

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<210> 75
<211> 240
<212> DNA
<213> Homo sapien

```

```

<400> 75
tcgagcggcc gcccgggcag gtccttcaga cttggactgt gtcacactgc caggcttcca 60
gggctccaac ttgcagacgg cctgttggtg gacagtctct gtaatcgga aagcaaccat 120
ggaagacctg ggggaaaaca ccattggttt atccaccctg agatctttga acaacttcat 180
cttcacagt gcggaggagg gctctggact ggatatttct acctcggccg cgaccacgct 240

```

```

<210> 76
<211> 330
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(330)
<223> n = A,T,C or G

```

```

<400> 76
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ggtgggtgca gatggcatcc actccgggtg cttcccatc tttctctggc ctgagcaagg 120
tcagcctgca gccagagtac agagggccaa cactgggtgt cttgaacaag ggccttagca 180
ggcctgaag grcctctctc gtagtgttga acttcttgga gccagggcac atgttctctt 240
cataccgagc gytagygatg gtgaagttag ggtgaaata gtattmangr agatggctgg 300
caracctgcc cgggcgggcc ctcsaatcc 330

```

```

<210> 77
<211> 361
<212> DNA
<213> Homo sapien

```

```

<400> 77
agcgtgggtc cggccgagg gtccttcagg gtctgcttat gcccttggtc aagaacacca 60
gtgtcagctc tctgtactct ggttgcaaac tgaccttgct caggcctgag aaggatgggg 120
cagccaccag agtggatgct gtctgcaccc atcgtctga ccccaaaagc cctggactgg 180
acagagagcg gctgtacttg aagctgagcc agctgaccca cggcatcact gagctgggcc 240
cctacacctt ggacagggac agtctctatg tcaatgggtt caccatcagg agctctgtac 300
ccaccaccag caccgggggt gtcagcgagg agccattcaa cctgcccggg cggccgctcg 360
a 361

```

```

<210> 78
<211> 356
<212> DNA
<213> Homo sapien

```

```

<220>

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<221> misc_feature
 <222> (1)...(356)
 <223> n = A,T,C or G

<400> 78
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 gaagttcaac accacggaga gggctcttca gggcctgctc aggtccctgt tcaagagcac 180
 cagtgtttgc cctctgtact ctggtgcag actgactttg ctcagacttg agaaacatgg 240
 ggcagccact ggagtggaag ccatctgcac cctccgctt gatccactg gtcttgact 300
 ggacagagag cggctatact gggagctgag ccagtcctct ggcggngacn cncctt 356

<210> 79
 <211> 226
 <212> DNA
 <213> Homo sapien

<400> 79
 agcgtggtcg cggccgaggt ccagtcgag catgctcttt ctctgccc ctggcncagt 60
 gaggaagatc tctgtgtgca gtgagaaggg tgcctccac tgagatggca gtcaaaagt 120
 catttaatac acctaacgta tcgaacatca tagcttgccc caggttatct catatgtgct 180
 cagaacactt acaatagcct gcagacctgc cggggcggcc gctcga 226

<210> 80
 <211> 444
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(444)
 <223> n = A,T,C or G

<400> 80
 ttgtgtgttg aacttccttg agncagggtg acccatgtcc tccccatact gcaggttggt 60
 gatggtgaag ttgaggytga atggtaccag gagagggccg gcagccataa ttgtsgrgck 120
 gsmgmssgag gmwggwgtty cwaggttcty rarrtccact gtggaggtec caggagtqct 180
 ggtggtgggc acagagstcy gatgggtgaa accattgaca tagagactgt tctgttccag 240
 ggtgtagggg ccagctctt yratgycatt ggycagttkg ctyagctccc agtacagccr 300
 ctctckgyyg mgwccagsgc ttttggggtc aagatgatgg atgcagatgg catccactcc 360
 agtggctgct ccatcttct cygaacctgag agaggtcagt ctgcagccag agtacagagg 420
 gccaacactg gtgttctttg aata 444

<210> 81
 <211> 310
 <212> DNA
 <213> Homo sapien

<400> 81
 tcgagcggcc gcccgggcag gtcaggaagc acattggtct tagagccact gcctcctgga 60
 ttccacctgt gctgcggaca tctccaggga gtgcagaagg gaagcaggtc aaactgctca 120
 gatcagtcag actggctgtt ctcaagtctc acctgagcaa ggtcagctcg cagccagagt 180
 acagagggcc aacactggtg ttcttgaaca agggcttgag cagacctgc agaacctct 240
 tccgtggtgt tgaacttctt ygaaaccagg gtgttgcatg ttttctctca taatgcaagg 300
 ttggtgatgg 310

<210> 82
 <211> 571
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(571)
 <223> n = A,T,C or G

<400> 82
 acggtttcaa tggacacttt tattgtttac ttaattggatc atcaattttg tctcactacc 60
 tacaaatgga atttcatctt gtttccatgc tgagtagtga aacagtgaaca aagctaataca 120
 taataaaccta catcaaaaaga gaactaagct aacactgctc actttctttt taacaggcaa 180
 aatataaata tatgcactct anaatgcaca atggtttagt cactaaaaaa ttcaaatggg 240
 atcttgaaga atgtatgcaa atccagggtg cagtgaagat gagctgagat gctgtgcaac 300
 tgtttaaggg ttcttggcac tgcctctctt ggccactagc tgaatcttga catggaaggt 360
 tttagctaata gccaaagtga gatgcagaaa atgctaagtt gacttagggg ctgtgcacag 420
 gaactaaaaa gcaggaaaqt actaaatatt gctgagagca tccaccccag gaaggacttt 480
 accttccagg agctccaaac tggcaccacc cccagtgtct acatggctga ctttatcttc 540
 cgtgttccat ttggcacagc aagtggcagt g 571

<210> 83
 <211> 551
 <212> DNA
 <213> Homo sapien

<400> 83
 aaggctgggt gggttttgat cctgtctggag aacctccqct ttcattgtga ggaagaaggg 60
 aagggaagaag atgcttcttg gaacaagggt aaagccgagc cagccaaaat agaagctttc 120
 cgagcttcac ttccaagct aggggatgtc tatgtcaatg atgcttttgg cactgtctac 180
 agagcccaca gctccatggt aggagtcact ctgccacaga aggctgggtg gtttttgatg 240
 aagaaggagc tgaactactt tgcaaaaggc ttggagagcc cagagcgacc cttcctggcc 300
 atcctgggag gagctaaaat tgcagacaag atccagctca tcaataatat gctggacaaa 360
 gtcaatgaga tgattatttg tgggtgaatg gcttttacct tcttaaggt gctcaacaa 420
 atggagattg gcacttctct gttctgtgaa gagggagcca agattgtcaa agacctaatg 480
 tccaaagctg aqaagaatgg tgtgaagatt accttgcttg ttgactttgt cactgtgac 540
 aagtttgatg a 551

<210> 84
 <211> 571
 <212> DNA
 <213> Homo sapien

<400> 84
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 taagttctga ttccaactta gctaattcat tctgagaact gtggtatagg tggcgtgtct 120
 cttctagctg ggacaaaagt tctttgtttt cccctgttag agtatcacag accttctgct 180
 gaagctggac ctctgtctgg gccttggact cccaaatctg ctgtcatgt tcaagcctgg 240
 aaatgttaat ctttaattct tccatatgga tggacatctg tctaagttga tcttttagaa 300
 cactgcaatt atottctttg agtctaattt cttcttcttt gctttgaatc gcatcactaa 360
 acttctcttc ccatttctta gcttcatcta tcacctgtc acgatcatcc tggagggaag 420
 acatgctctt agtaaaaggct gcaagctggg tcacagtact gtccaaagtt tcttgaagtt 480
 gctgaacttc cttgtctttc ttgttcaaag taacctgaat ctttccaatt gtctcttcca 540

agtggacttt ttctctgccc aaagcatcca g 571

<210> 85
<211> 561
<212> DNA
<213> Homo sapien

<400> 85
tcattgcttg tgatggcacc tggatgtga tgagcagcca ggaagtgtga gatttcattc 60
aatcaaaaga ttcagcatgt ggtggaagct gtgaggcaag agaaacaaga actgtatggc 120
aagttaagaa gcacagaggc aaacaagaag gagacagaaa agcagttgca ggaagctgag 180
caagaaatgg aggaatgaa agaaaagatg agaaagtgtg cttaatctaa acagcagaaa 240
atcttagagc tggagaaga gaatgaccgg cttagggcag aggtgcaccc tgcaggagat 300
acagctaaag agtgtatgga aacacttctt tcttccaatg ccagcatgaa ggaagaactt 360
gaaagggta aaatggagta tgaaacctt tctaagaagt ttcagtcttt aatgtctgag 420
aaagactctc taagtgaaga ggttcaagat ttaaagcacc agatagaagg taatgtatct 480
aaacaagcta acctagaggc caccgagaaa catgataacc aaacgaatgt cactgaagag 540
ggaacacagt ctataccagg t 561

<210> 86
<211> 795
<212> DNA
<213> Homo sapien

<400> 86
aagccaataa tcaccattta ttacttaata tatgccaacc actgtacttg gcagttcaca 60
aattctcacc gttacaacaa ccccatgagg tatttatcc cattctatag atagggaaac 120
cacagctcaa gtaagttagg aaactgagcc aagtatacac agaatacga gtggcaaaac 180
tagaaggaaa gactgacact gctatctgct ggcctccagt gtccctggctc ttttcacacg 240
ggttcaatgt ctccagcgtc gctgctgctg ctgcattacc atgccctcat tgtttttctt 300
cctctgggtg tcaactgcat ccttcaaaga atctaactca ttccagagac caactatttc 360
tttctctctt tctgaaatta cttttaataa ttcttcatga gggggaaaag aagatgcttg 420
ttgtgagttt tgtttgttaa gctgctcaat ttgggactta aacaatttgt tttcatcttg 480
tacatcctgt aacagctgtg ttgtgctaga aagatcactc tccctctctt ttaqcatggc 540
ttctaaccct tcaattcat ttcccttttc tttaaacaca atctcaagtt cttaaaactg 600
tgatgcagaa gaggcctctt tcaagttatg ttgtgctact tctgaacat gtgcttttaa 660
agattcattt tcttcttgaa gatcctgtaa ccacttccct gtattggcta ggtctttctc 720
tttctcttcc aaaaacagct tcatgggtatt catctgttcc tcttttctct ttaataagtt 780
caggagcttc agaac 795

<210> 87
<211> 594
<212> DNA
<213> Homo sapien

<400> 87
caagcttttt tttttttttt aaaaagtgtt agcattaatg ttttattgtc acgcagatgg 60
caactgggtt tatgtcttca ttttttatat ttttgtaa ataaaaaatt acaagtttta 120
aatagccaat ggctggttat attttcagaa aacatgatta gactaattca ttaatgggtg 180
cttcaagctt ttctttattg gctccagaaa attcaccac cttttgtccc ttcttaaaaa 240
actggaatgt tggcatgcat ttgacttcac actctgaagc aacatcctga cagtcattca 300
catctacttc aaggaatata acgtttggaat acttttcaga gagggaaatga aagaaaggct 360
tgatcatttt gcaaggccca caccacgtgg ctgagaagtc aactactaca agtttatcac 420
ctgcagcgtc caaggcttcc tgaaaagcag tcttgctctc gatctgcttc accatcttgg 480
ctgctggagt ctgacgagcg gctgtaagga ccgatggaaa tggatccaaa gcaccaaaca 540

gagcttcacg acctgctgct tggcttgaat tcggatccga tctgcccag gcc 594

<210> 88
 <211> 557
 <212> DNA
 <213> Homo sapien

<400> 88
 aagtgttagc attaatgttt tattgtcacg cagatggcaa ctgggtttat gtcttcatat 60
 ttatatattt tgtaaattaa aaaaattmca agttttaaat agccaatggc tggttatatc 120
 ttcagaaaaac atgatttagac taattcatta atgggtggtt caagcttttc cttattggct 180
 ccagaaaaatt caccacacct ttgtcccttc ttaaaaaact ggaatgttgg catgcatttg 240
 acttcacact ctgaagcaac atcctgacag tcatccacat ctacttcaag gaatatcacg 300
 ttggaatact ttccagagag ggaatgaaag aaaggcttga tcattttgca aggccacac 360
 cactgtggctg agaagtcaac tactacaagt ttatcacctg cagcgtccaa ggcttccctga 420
 aaagcagctc tgcctcctat ctgcttcaac atcttggttg ctggagtctg acgagcggct 480
 qtaaggaccg atggaatgg atccaaaqca ccaaacagag ctccaagact cgtgctttgg 540
 catgaattcg gatccga 557

<210> 89
 <211> 561
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{561}
 <223> n = A,T,C or G

<400> 89
 tacaaaactct attgaaacgc acacgcgcac acacacaaac acccctgttg atagggaana 60
 gcacctggcc acaggggtcca ctgaaacggg gaggggatgg cagcttgtaa tgggtcttll 120
 gccacaaccc ccttctgaca gggaaggcct tagattgagg ccccaacctcc catggctgatg 180
 gggagctcag aatgggggtcc agggagaaat tggttayggg gagggtcttg ggagggctqn 240
 gtagagggca cctccgagt ygggtcccga gggctgcaga gtcttcagta ctgtccctca 300
 cagcagctgt ctcaaggctg ggtccctcaa aggggcttcc cagcggggg cctcccttcg 360
 caaacacttg gtacctctgg ctgcgcagcg gaagcccaqca ggacagcagt ggccgccgat 420
 agcacacaag acqccctggc ggtayggaca gcaggccag cctgtctggt tgtctcggca 480
 gcaggtcttg ttatcatggc agaagtgtcc ttcccacact tcacgtcctt cacacccacg 540
 tqangcctac nggccaggaa g 561

<210> 90
 <211> 561
 <212> DNA
 <213> Homo sapien

<400> 90
 cccgtgggtg ccateccagg agttgttacc tgatctttgg aagcaggatc gccctctctgc 60
 actgcagtg gaaagggcag caactggaag tccctgagac ggtaaaagat caggagtgyc cggcagagca 120
 gaaggggca caactggaag tccctgagac ggtaaaagat caggagtgyc cggcagagca 180
 gtgggcatca accctggcagg ggcacccag atgcctcttc agtgtttgtg gccattttgc 240
 caaagggga cggcagcagc tgtagctggc tccctccggg tccagggcagc agggccacag 300
 gcagaactga ccactctggc accgcgttcc agccaccagc cctgctgtta agggccacca 360
 gctcaccag gtccacatgg tctgcctggc tccgaactcc cggctccttg gccctgatgg 420
 ttctacctgc tgtgagctgc ccagtgaggaa gtatggctgc tgccaatgcc caacgccacc 480

tgctgctcgg atcacctgca ctgctgcccc aagacactgr gtgtgacctg atccagagta 540
 agtgctcttc caaggagaac y 561

<210> 91
 <211> 541
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(541)
 <223> n = A,T,C or G

<400> 91
 gaatcacctt tctggtttag ctagtacttt gtacaganca atgaggtttc ccacagcggg 60
 gtctccctgg gctctgtttg gctctcggta aggcaggcct acaccttttc ctctcctcta 120
 tggagagggg aatatgcatt aaggtgaaaa gtccaccttc aaaagtggag aagggattcg 180
 attgctgctt caggactgtg gaattatttg gaatgtttta caaatgggtg ctacaaaaca 240
 accaaaaaag taattacaaa atgtgtacat cacaacatgc tttttaaaga cattatgcat 300
 tgtgtctaca ttcctttaa tgttgttttc aaagggtctc agcctctagc ccagctggat 360
 tctccgggaa gaggcagaga cagtttgqcg aaaaagacac aggggaaggag ggggtgtgta 420
 aaggagaaag cagccttcca gttaaagatc agcctcagc taaaggctag cttcccgcan 480
 gctggcctca nqcgagctc ggtcagagg gaggagcagc agcagggtgq qactggggcg 540
 t 561

<210> 92
 <211> 551
 <212> DNA
 <213> Homo sapien

<400> 92
 aaccggagcg cgagcagtag ctgggtgggc accatggctg ggaatcacac catcgaggcg 60
 gtgaagcgca agatccaggt tctgcagcag caggcagatg atgcagagga gcgagctgag 120
 cgctccagc gagaagtta qyagaaaagg cgggcccggg aacaggctga ggctgagglg 180
 gctccttga accgtaggat ccagctgggt gaagaagagc tggaccgtgc tcaggagcgc 240
 ctggccactg ccttgcaaaa gctggaaqaa cctgaaaaag ctgctgalga yagtgaaga 300
 ggtatgaagg ttatlgaaaa ccgggcctta aaagatgagc aaaaatgga actccacgaa 360
 atccaaacta aaqaaactaa gcacattgca gaagaggcag ataggaagta tgaagagctg 420
 gctcgttaagt tggatgatcat tgaaygagc ttggaacgca cagaggaaag agctgagctg 480
 gcagagctcc gttgccgaga gatggagagc cagattagac tgaatggacca gaacctgaag 540
 tgtctgagtg c 561

<210> 93
 <211> 531
 <212> DNA
 <213> Homo sapien

<400> 93
 qaqaacttgg cctttattgt gggcccagga gggcacaaaag gtcaggaggc ccaaggaggg 60
 gatctggttt tctggatagc caggtcatag catgggtatc aqtaggaatc cgctgtagct 120
 gcacaggcct cacttgctgc agttccgggg aqaacacctg cactgcatgg cgttgatgac 180
 ctcggtgtac acgacagagc cattgggtgca gtgcaagggc acgcgcattg gctccgtcct 240
 cgagggcagg cagcaggagc attgctcctg cacatcctcg atgtcaatgg agtacacagc 300
 tttgctggca cactttccct ggcagtaatg aatgtccact tctcttggg acttacaatc 360
 tcccactttg atgtactgca ccttggctgt gatgtctttg caatcaggct cctcacatgt 420

```
gtcacagcaq gtgactgaa ttttcacgat ttgactctct tcagccagac acttgtgttc 480
atcaaatggt gggcagcccg tgacctctt ctccagatg tactctcttc t 531
```

```
<210> 94
<211> 531
<212> DNA
<213> Homo sapien
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```
<220>
<221> misc_feature
<222> (1)...(531)
<223> n = A,T,C or G
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```
<400> 94
gcctggacct tgcggatca gtgccacaca gtgaacttgc tggcaaatgg ccagaccttg 60
ctgcagagtc atcgtgtcaa ttgtgacctt ggaccccgcc ctccatgtgc caacagccag 120
tctcctgttc ggggtggagg gacgtgtggc tgcgctgga ctgccccttg tgtgtgcacg 180
ggcagttcca ctgggcacat cgtcaccttc gatgggcaga atttcaagct tactggtagc 240
tgctcctatg tcactcttca aaacaaggag caggacctgg aagtgtctct ccacaatggg 300
gcctgcagcc ccggggcaca acaagcctgc atgaagtcca ttgagattaa gcatgctggc 360
gtctctgtgc agctgcacag taacatggag atggcagtg atgggagact ggtccttgcc 420
ccgtacgttg gtgaaaacat ggaagtccgc atctacggcg ctatcatgta tgaagtccag 480
tttaaccata ttggccacat cctcacatcc accgccncaa aacaacgagt t 531
```

```
<210> 95
<211> 605
<212> DNA
<213> Homo sapien
```

```
<400> 95
agatcaacct ctgctgggca ggaggaaatgc ctctccttgc ttggatcttt gctttgacgt 60
tctcgatagt rwcaactkk r ytsramskma agkgyratgr wmtlksywgw rasykrmwwm 120
rsqraraylt agacaycccm cctcwagagc gsagkaccar gtgcagaggt ggactctctc 180
tggatgttgt agtcagacag ggtgcgtcca tcttccagct gtttccagc aaaqalcaac 240
ctctgctgat caggagggat gccttcccta tcttggatct ttgccttgac attctcgatg 300
gtctcactgg gctccacctc gaggggtgat gtctllaccag rcagggtctt cacgaagaty 360
tgcatccac ctctgagacg gagcaccagg tgcagggttg actcttcttg gatgltgtag 420
tcagacaggg tgcgyccatc ttccagctgc ttcccsagca aaqatcaacc tctgctgggc 480
aggaggratg ccttcccttg cytgatctt tgcyltgacr ttctcratgg tctcactcgg 540
ctcacttcg agagtgatgg tcttaccagt cagggtcttc acgaagatct gcatccacc 600
tctaa 605
```

```
<210> 96
<211> 531
<212> DNA
<213> Homo sapien
```

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<400> 96
aagtcacaaa cagacaaa tttattaccag ctgcaagcta tattagaagc tgaacgaaga 60
gacagaggtc atgattctga gatgattgga gaccttcaay ctgcaattac atctttacaa 120
gaggagggtga agcatctcaa acataatctc gaaaaagtgg aaggagaaay aaaagaggct 180
caagacatgc ttaatcactc agaaaaggaa aagaataatt tagagataga tttaaactac 240
aaacttaaat cattacaaca acggttagaa caagaggtaa atgaacacaa agtaaccaaa 300
gctcctttaa ctgacaaa tcaatctatt gaagaggcaa agtctgtggc aatgtgtgag 360
atggaaaaaa agctqaaa agaaaqaaa gctcagagaa aggctgaaaa tgggttgttt 420
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sagattgaga aacagtgttc catgctagac gttagatctga agcaatctca gcagaaacta 480
gaacatttga ctggaaatan agaaaggatg gaggatgaag ttaagaatct a 531

<210> 97
<211> 1017
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(1017)
<223> n = A,T,C or G

<400> 97
cgctccacc atgtccatca yggtagacca gaagtccctac aagggtgtcca cctctggccc 60
ccgggccttc agcagccgct cctacacgag tgggcccgtt tcccgcatca gctcctcgag 120
cttctcccga gtgggcagca gcaacttttc cgttgccctg ggcggcggct atggtggggc 180
cagcggcatg ggagggcatca ccgcagttac ggtcaaccag agcctgctga gcccccttgt 240
cctggaggtg gaccccaaca tccaggccgt gcgcacccag gagaaggagc agatcaagac 300
cctcaacaac aagtttgctt ccttcataga caaggtacgg ttccctggagc agcagaacaa 360
gatgctggag accaagtggg gcctcctgca gcagcagaag acggctcgaa gcaacatgga 420
caacatgttc gagagctaca tcaacarcct taggcggcag ctggagactc tgggccagga 480
gaagctgaag ctggaggcgg agcttggcaa catgcagggg ctggtggagg acttcaagaa 540
caagtatgag gatgagatca ataagcgtac agagatggag aacgaatttg tccctatcaa 600
gaaggatgtg gatgaagctt acatgaacaa ggtagagctg gagtctcgcc tggaggggct 660
gaccgacgag atcaacttcc tcaggcagct gtatgaagag gagatccggg agctgcagtc 720
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cagcatcatt gctgagggtc aggcacagta cgagcatatt gccaacccga gccgggctga 840
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ggatgacctg cgggcacaaa agactgagat ctctgagatg aacccgggaa atcagcccg 960
ctncaggctg agattgaggg cctcaaaggc caganggctt ncctggangn ccgccat 1017

<210> 98
<211> 561
<212> DNA
<213> Homo sapien

<400> 98
ccccgagcca gccaacgagc ggaaaatggc agacaatttt tcgctccatg atgcgttatc 60
tgggtctgga aacccaaacc ctcaaggatg gcctggcgca tgggggaacc agcctgctgg 120
ggcagggggc taaccagggg ctctctatcc tggggcctac cccgggcagc ccccccagg 180
ggcttatcct ggacaggcac ctccaggcgc ctaccctgga gcacctggag ctatccccg 240
agcacctgca cctggagctt acccagggcc acccagcggc cctggggcct acccatctc 300
tggacagcca agtgccacog gagcctaccc tgccactggc ccttatggcg cccctgctgg 360
gccactgatt gtgccttata acctgccttt gcctggggga gtggtgcctc gcatgctgat 420
aacaattctg ggcacgggtg agcccaatgc aaacagaatt gcttttagatt tccaaagagg 480
gaatgatgtt gccttccact ttaaccacag ctccaatgag aacaacagga gattcatagg 540
ttgcaatata aagctggata a 561

<210> 99
<211> 636
<212> DNA
<213> Homo sapien

<400> 99

gggaatgcaa caacttttatt gaaaggaaag tgcaatgaaa tttgttgaaa ccttaaaag 60
ggaaacttag acaccccccc tcragecmag kaccargtgc aragggtggac tctttctgga 120
tgttgtagtc agacagggtc cgwccatctt ccagctgttt yccrgcaaaag atcaacctct 180
gctgatcagg aggratgcct tccttatctt ggatctttgc cttagacattc tcgatggtgt 240
cactgggctc cactctgagg gtgatggctt taccagtcag ggtcttcacy aagatytgca 300
tcccacctct gagacggagc accaggtgca gggtrgactc tttctggatg ttgtagtcag 360
acagggtgctg yccatcttcc agctgcttcc csagcaaaaga tcaacctctg ctggtcagga 420
ggratgcctt ccttgctctg gatctttgcy ttgacttctt caatgggtgc actcggtctc 480
acttcagag tgatggtctt accagtcagg gtcttcacga agatctgcat cccacctcta 540
agacggagca ccaggtgcag ggtggactct ttctggatgg ttgtagtcag acagggtgcy 600
tccatcttcc agctgtttcc cagcaaaagt caacct 636

<210> 100

<211> 697

<212> DNA

<213> Homo sapien

<400> 100

aggttgatct ttgtgggaa acagctggaa gatggacgca cctctgtctga ctacaacct 60
ccagaaagag tccacctgc acctggtgct ccgtcttaga ggtgggatgc agatcttcgt 120
gaagacctg actggtaaga ccatcactct cgaagtggag ccgagtgcac ccattgagaa 180
ygtcaargca aagatccarg acaaggaaag catyccctct gaccagcaga ggttgatctt 240
tgctsggaaa gcagctggaa gatggcgca cctgtctga ctacaacctc cagaaagagt 300
cyacctgca cctggtgctc cgtctcagag gtgggatgca ratcttcgtg aagacctga 360
ctggttaagac catcacctc gaggtggagc ccagtgcac catcgaqaat gtcaaggcaa 420
agatccaaga taaggaaagg atccctcctg atcagcagag gttgatcttt gctgggaaac 480
agctggaaga tggacgcacc ctgtctgact acaacatcca gaaagagtc accctgtcac 540
ytggtmctbc gtctyagagg kgggtgcaa atctwmgtkw agacactcac tkkyaagryy 600
atcamcmwtg akktcgakys castkwact wtcrakaamg tyrwgcawa gatccmagac 660
aagyaaygca ttcctctga ccagcagagg ttgatct 697

<210> 101

<211> 451

<212> DNA

<213> Homo sapien

<400> 101

atggagtctc actctgtcga ccaggctgga gogctgtgct gcgatatcgg ctactgcag 60
tctccacttc ctgggttcaa gogatectcc tgcctcagcc tcccagtag ctgggactac 120
aggcagcgct caccataatt ttgtatctt tagtagagac atggtttcgc catgttggt 180
gggctggtct cgaactcctg acctcaagtg atctgtctg gcctcccaaa gtgttgggat 240
tacaggcgaa agccaacgct cccggccagg gaacaacttt agaataaagg aaatatgcaa 300
aagaacatca catcaaggat caattaatta ccactatta attactatat gtgggtaatt 360
atgactattt cccaagcatt ctacgttgac tgcttgagaa gatgtttgtc ctgcatggtg 420
gagagtggag aagggccagg attcttaagt t 451

<210> 102

<211> 571

<212> DNA

<213> Homo sapien

<400> 102

agcgcggctt tccggcgca gaaagctgaa ggtgatgtgg ccgcccctcaa ccgacgcac 60
cagctcggtt aggaggagt ggacagggt caggaacgac tggccacggc cctgcagaag 120
ctggaggagg cagaaaaagc tgcagatgag agtgagagag gaatgaagg gatagaaaac 180

```

cgggccatga aggatgagga gaagatggag attcaggaga tgcagctcaa agaggccaag      240
cacattgcgg aagaggctga ccgcaaatac gaggaggtag ctcgtaagct ggtcatcctg      300
gagggtgagc tggagagggc agaggagcgt gcggagggtgt ctgaactaaa atgtggtgac      360
ctggaaqaag aactcaagaa tgttactaac aatctgaaat ctctggaggc tgcattctgaa      420
aagtattctg aaaaggagga caaatatgaa gaagaaatta aacttctgtc tgacaaactg      480
aaagaggctg agacccgtgc tgaatttgca gagagaacgg ttgcaaaact ggaaaagaca      540
attgatgacc tggagagaaa acttgcaccg c

```

```

<210> 103
<211> 451
<212> DNA
<213> Homo sapien

```

```

<400> 103
gtgcacaggt cccatttatt gtagaaaata ataataatta cagtgatgaa tagctcttct      60
taaattacaa aacagaaacc acaaaagaagg aagaggaaaa accccaggac ttccaagggt      120
gaagctgtcc cctcctccct gccacccctc caggctcatt agtgtccttg gaaggggcag      180
aggactcaga ggggatcagt ctccaggggc cctgggctga agcgggtgag gcagagagtc      240
ctgaggccac agagctgggc aacctgagcc gccctctctg cccctctccc caccactgcc      300
caaacctggt tacagacact tcgccccctc cctctaaacc cgtccatcca ctctgcactt      360
cccaggcagg tgggtgggcc aggcctcagc catactcctg ggcgcgggtt tcggtgagca      420
aggcacagtc ccagaggtga tatcaaggcc t

```

```

<210> 104
<211> 441
<212> DNA
<213> Homo sapien

```

```

<400> 104
gcaaggaaact ggtctgtcca caettgtctg cttgcgcata aggactggct ttatctcctg      60
actcacgggtg caaagggtgca ctctgcgaac gttaagtccg tccccagcgc ttggaatcct      120
acggccccc aagccggatc cctcagcct tccaggtcct caactccctg ggacgtgaa      180
caatggcctc catggggcta caggtaatgg gcacgcgcct ggcctcctg ggtggtctg      240
ccgtcatgct gtgtgcgcg ctgccccatg ggcgcgtgac ggccttcata ggcagcaaca      300
ttgtcacctc gcagaccata tgggagggcc tatggatgaa ctgctggtg cagagcaccc      360
gccagatgca gtgcaagggtg taccactcgc tgcctggcact gccgcaggac ctgcaggcgg      420
cccgccctc cgtcatcata a

```

```

<210> 105
<211> 509
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(509)
<223> n = A,T,C or G

```

```

<400> 105
tgcaaaaggg acacaggggt tcaaaaaata aaattttctt tccccctccc caaacctgta      60
ccccagctcc ccgaccacaa ccccttcctt cccccgggga aagcaagaag gagcaggtgt      120
ggcatctgca gctgggaaga gagagccggg ggaggtgccg agctcgggtg tggctctttt      180
ccaaatataa atacntgtgt cagaactgga aaatctctca gcaccacca cccaagcact      240
ctccgttttc tgcgggtgtt tggagagggg cggggggcag gggcgccagg caccggtg      300
ctcgggtcta ctgcatccgc tgggtgtgca ccccgcgagc ctctgtctgc tcattgtaga      360

```

agagatgaca ctccggggtcc ccccggatgg tgggggctcc ctggatcagc ttcccgggtc 420
tgggggttac acaccagcac tcccacgct gcccgttcag agacatcttg cactgtttga 480
ggttgatcac gccatgcttg tcacagttag 509

<210> 106
<211> 571
<212> DNA
<213> Homo sapien

<400> 106
gggttgagg gactggttct ttatttcaaa aagacacttg tcaatattca gtatcaaaac 60
agttgcacta ttgatttctc tttctcccaa tcggccccc aaagagaccaca taaaaggaga 120
gtacatttta agccaataag ctgcaggatg tacacctaac agacctccta gaaaccttac 180
cagaaaatgg ggactgggta ggggaaggaaa cttaaaagat caacaaactg ccagcccacg 240
gactgcagag gctgtcacag ccagatgggg tggccagggt gccacaaacc caaagcaaaag 300
tttcaaaata atataaaatt taaaaagttt tgtacataag ctattcaaga tttctccagc 360
actgactgat acaaaqcaca attgagatgg cacttctaga gacagcagct tcaaaaccag 420
aaaagggtga tgagatgagt ttcacatggc taaatcagtg gcaaaaacac agtcttcttt 480
ctttctttct tcaaggagg caggaaaagca attaatgggt caactcaaca taagggggac 540
atgatccatt ctgtaagcag ttgtgaagg g 571

<210> 107
<211> 555
<212> DNA
<213> Homo sapien

<400> 107
caggaaaccg agcgcgagca gtagctgggt gggcaccatg gctgggatca ccaccatcga 60
ggcgggtgaag cgcaagatcc aggttctgca gcagcaggca gatgatqcaq aggagcgagc 120
tgagcgcttc cagcgagaag ttgagggaga aagcggggcc cgggaacagg ctgaggctga 180
ggtggcctcc ttgaaccgta ggatccagct ggttgaagaa gagctggacc gtgctcagga 240
gcgcctggcc actgccctgc aaaagctgga agaagctgaa aaagctlycty atgagagtga 300
gagaggtatg aaggttattg aaaaccgggc cttaaaagat gaagaaaaga tggaaactcca 360
ggaaatccaa ctcaaagaag ctaagcacat tgcagaagag gcagatagga agtatgaaga 420
ggtggctcgt aagttggtga tcattgaagq agacttggaa cgcacagagg aacgagctga 480
gctggcagag tcccgctgcc gagagatgga tgagcagatt agactgatgg accagaacct 540
gaagtgtctg agtgc 555

<210> 108
<211> 541
<212> DNA
<213> Homo sapien

<400> 108
atctacgtca tcaatcaggc tgagacacc atgttcaate gagctaagct gctcaatatt 60
ggctttcaag aggccttgaa ggactatgat tacaactgct ttgtgttcag tgatgtggac 120
ctcattccga tggacgaccg taatgcctac aggtgttttt cgcagccacg gcacatttct 180
gttgcaatgg acaagtccg gtttagcctg ccatatgttc agtattttgg aggtgtctct 240
gctctcagta aacaacagtt tcttgccatc aatggattcc ctaataatta ttgggggttg 300
ggaggagaag atgacgacat ttttaacaga ttagtgcata aaggcatgct tatatcacgt 360
ccaaatgctg tagtagggag gtgtcqaatg atccggcatt caagagacaa gaaaaatgag 420
cccaatcctc agaggtttga ccggatcgca catacaaagg aaacgatgag cttcgatggt 480
ttgaactcac ttacctacaa ggtgttgat gtcagagata cccgttatat acccaaatca 540
c 541

<210> 109
<211> 411
<212> DNA
<213> Homo sapien

<400> 109
ctagacctct aattaaaagg cacatcatg ctggagaatg aacagtctga ccccgagggc 60
cacagcgaaat tttagggaaq gaggcaaaga ggtgagaagg gaaaggaaag aaggaaggaa 120
ggagaacaat aagaactgga gacgttgggt gggtcaggga gtgtgtgtga ggctcggaga 180
gatggtaaac aaacctgact gctatgagtt ttcaaccca tagtctaggg ccatgagggc 240
gtcagttctt ggtggctgag ggtccttcca cccagccac ctgggggaggt ggagtgggga 300
gttctgcccag gtaagcagat gttgtctccc aagtctctga cccagatgtc tggcaggata 360
acgctgacct gttccctcaa caaggacct gaaagtaatt ttgctcttta c 411

<210> 110
<211> 451
<212> DNA
<213> Homo sapien

<400> 110
ccgaattcaa ggcgtcaacga tccytccctt accatcaaat caattggcca ccaatggtac 60
tgaacctacg agtacaccga ctacggggcg actaatcttc aactctaca tacttccccc 120
attattccta gaaccaggcg acctgcgact ccttgacgtt gacaatcgag tagtactccc 180
gattgaagcc cccattcgta taataattac atcacaagac gtcttgcact catgagctgt 240
ccccacatta ggcttaaaaa cagatgcaat tcccgagcgt ctaagccaaa ccactttcac 300
cgctacacga cggggggtat actacgggtc atgctctgaa atctgtggag caaaccacag 360
tttcatgccc atcgtcctag aattaattcc cctaaaaatc ttgaaatag ggcccgatatt 420
tacctatag caccctctct acccctctct g 451

<210> 111
<211> 541
<212> DNA
<213> Homo sapien

<400> 111
gtctcttcaca cttttattgt taattctctt cacatggcag atacagagct gtctgtttga 60
agaccaccac tgaccaggaa atgccacttt tacaaaatca tccccctttt tcatgattgg 120
aacagttttc ctgaccgtct gggagcgttg aagggtgacc agcacatttg cacatgcaaa 180
aaaggagtgga ccccaaggcc tcaaccacac ttoccagagc tcaccatggg ctgcagggtga 240
cttgccaggt ttgggggtcg tgagctttcc ttgctgtctc ggtggggagg cctcaagaa 300
ctgagaggcc ggggtatgct tcatgagtgt taacattttac gggacaaaag cgcattatta 360
ggataaggaa cagccacagc acttcatgct tgtgagggtt agctgttagga gcgggtgaaa 420
ggattccagt ttatgaaaat ttaaaagcaaa caacggtttt tagctgggtg ggaacacaga 480
aaactgtgat gtcggccaat gaccaccatt tttctgcccc tqtgaagggtc cccatgaaac 540
c 541

<210> 112
<211> 521
<212> DNA
<213> Homo sapien

<400> 112
caagcgcttg gcgtttggac ccagttcagt gaggttcttg ggttttgtgc ctttggggat 60
tttggtttga cccaggggtc agccttagga aggtcttcag gagggaggcg agttccctt 120
cagtaccacc cctctctccc cactttccct ctctcggcaa catctctggg aatcaacagc 180

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atattgacac gttggagccg agcctgaaca tgccctcgg cccagcaca tggaaaaccc 240
ccttccttgc ctaagggtgc tgagtttctg gctcttgagg catttccaga cttgaaattc 300
tcattcagtc attgctcttg agtctttgca gagaacctca gatcaggtgc acctgggaga 360
aagactttgt cccacttac agatctatct cctcccttgg gaagggcagg gaatggggac 420
ggtgtatgga ggggaaggga tctcctgcgc ccttcattgc cacacttqqt gggaccatga 480
acatctttag tgtctgagct tctcaaatta ctgcaatagg a 521

```

<210> 113

<211> 568

<212> DNA

<213> Homo sapien

<400> 113

```

agcgtcaaat cagaatggaa aagactcaaa accatcatca acaccaagat caaaaggaca 60
agratccttc aagaaacagg aaaaaactcc taaaacacca aaaggacctc gttctgtaga 120
agacattaaa gcaaaaatgc aagcaagtat agaaaaagg ggttctcttc ccaaagtggg 180
agccaaattc atcaattatg tgaagaattg cttccggatg actgaccaag aggcatttca 240
agatctcttg cagtggaggga agtctcttla agaaaaatgt ttaaacattt tgttaaaaaa 300
ttttccgtct tatctcattt ctgtaacagt tgatatctgg ctgtcccttt tataatgcag 360
agtgagaact ttcctaccg tgtttgataa atgttgtcca ggttctattg ccaagaatgt 420
gttgccaaa atgcctgttt agttttttaa gatggaactc caccctttgc ttggttttaa 480
gtatgtatgg aatgttatga taggacatag tagtagcggg ggtcagacat ggaaatggtg 540
ggsmgacaaa aatatcatg tgaataaa 568

```

<210> 114

<211> 483

<212> DNA

<213> Homo sapien

<400> 114

```

tccgaattcc aagcgaatta tggacaaacg attcctttta gaggattact tttttcaatt 60
tcggtttttag taatctaggc tttgctgtga aagaatacaa cgatggattt taaatactgt 120
ttgtggaatg tgtttaaaag attgattcta gaacctttgt atatttgata gtatttctaa 180
ctttcatttc ttactgttt gcagttaatg ttcattgtct gctatgcaat cgtttatatg 240
cacgtttctt taattttttt agattttcct ggaatgtatg tttaacaac aaaaagtcta 300
tttaaaactg tagcagtagt ttacagttct agcaaaagag aaagttgttg ggttaacctt 360
tgtattttct ttcttataga ggcttctaaa aagggtattt tatatgttct ttttaacaaa 420
tattgtgtac aacctttaaa acatcaatgt ttggatcaaa acaagaccca gcttattttc 480
tgc 483

```

<210> 115

<211> 521

<212> DNA

<213> Homo sapien

<400> 115

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tgttgtggcg cgggctgagg tggaggccca ggactctqac cctgccctg ccttcagcaa 60
ggcccccgcc agcgccggcc actacgaact gccgtgggtt gaaaaatata ggccagtaaa 120
gctgaatgaa attgtcggga atgaagacac cgtgagcagg ctagaggtct ttgcaaggga 180
aggaatgtg cccaacatca tcattgcggg cctccagga accggcaaga ccacaagcat 240
tctgtgcttg gcccgggccc tgcctggccc agcactcaaa gatgccatgt tggaaactcaa 300
tgcttcaaat gacaggggca ttgacgttgt gaggaataaa attaaaatgt ttgctcaaca 360
aaaagtcact cttccaaaag gccgacataa gatcatcatt ctggatgaag cagacagcat 420
gaccgacgga gccagcaag ccttgaggag aaccatggaa atctactcta aaaccactcg 480
ttcgcccttg cttgtaatgc ttcggataag atcatcgagc c 521

```

<210> 116
 <211> 501
 <212> DNA
 <213> Homo sapien

<400> 116
 ctttgcaaaag cttttatttc atgtctgagg catggaatcc acctgcacat ggcattcttag 60
 ctgtgaagga gaaagcagtg caccagaagg aatgagtgagg cggaaaccaac ggcctccaca 120
 agctgccttc cagcagcccg ccaaggccat ggcagagaga gactgcaaac aaacacaagc 180
 aaacagagtc tcttcacagc tggagtcctga aagctcatag tggcatgtgt gaattctgaca 240
 aaattaaaaa tgtgcatagt ccattacatg cataaaacac taaataaat cctgtttaca 300
 cgtgactgca gcaggcaggt ccagctccac cactgccctc ctgccacatc acatcaagtg 360
 ccatgggtta gaggggtttt catatgtaat tcttttattc tgtaaaaggt aacaaaatat 420
 acagaacaaa actttccctt tttaaaacta atgttacaaa tctgtattat cacttggata 480
 taaatagtat ataagctgat c 501

<210> 117
 <211> 451
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(451)
 <223> n = A,T,C or G

<400> 117
 caagggatat atgttgaggg taergrgtga cactgaacag atcacaaagc acgagaaaca 60
 ttagttctct ccccccag cgtctccttc gtctccctgg ttttccgatg tccacagagt 120
 gagattgtcc ctaagttaact gcatgatcag agtgctgkct ttataagact cttcattcag 180
 cgtatccaat tcagcaattg cttcatcaaa tqccgttttt gccaggctac aggccctttc 240
 aggaagattt aqaatctcat agtaaaagac tgaqaaattt agtgccagac caaqacgaat 300
 tgggtgtgta ggctgcattt ctttcttact aatttcaaat gcttccctgg aagccctgtg 360
 ggagttcgac acaagtgggt tgtttgttgc tccagatgcc acttcagaaa gataccctaaa 420
 ataattctct ttcattttca aagtagaaca c 451

<210> 118
 <211> 501
 <212> DNA
 <213> Homo sapien

<400> 118
 tccggagccg gggtagtcgc cgccgccgcc gccgggtgcag ccactgcagg caccgctgcc 60
 gccgcctgag tagtgggctt aggaagyaag aggtcatctc gctcggagct tcgctcggaa 120
 gggctcttgt tccctgcagc cctcccacgg gaatgacaat ggataaaagt gagctggtac 180
 agaaagccaa actcgtgag caggctgagc gatatgatga tatggctgca gccatgaagg 240
 cagtcacaga acaggggcat gaactctcca acgaagagag aaatctgctc tctgttgctt 300
 acaagaatgt ggtaaggccg cccgccgctc ttcctggcgt gtcattctcca gcattgagca 360
 gaaaacagag aggaatgaga agaagcaqca gatgggcaaa gagtaccgtg agaagataga 420
 ggcagaactg caggacatct gcaatgatgt tctggagctt gttggacaaa tatcttatc 480
 caatgctaca caaccagaa a 501

<210> 119
 <211> 391

<212> DNA
<213> Homo sapien

<400> 119
aaaaagcagc argttcaaca caaaatagaa atctcaaatg taggatagaa caaaaccaaag 60
tgtgtgaggg gggaagcaac agcaaaagga agaaatgaga tgttgcaaaa aagatggagg 120
aggggtcccc tctcctctgg ggactgactc aaacactgat gtggcagtat acaccattcc 180
agagtcaggg gtgttcattc ttttttggga gtaagaaaag gtggggatta agaagacgtt 240
tctggaggct tagggaccaa ggctggtctc tttccccctt cccaaccccc ttgatccctt 300
tctctgatca gggaagga gctcgaatga gggaggtaga qttggaaggg gaaaggattc 360
cacttgacag aatgggacag actccttccc a 391

<210> 120
<211> 421
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(421)
<223> n = A,T,C or G

<400> 120
tggcaatagc acagccatcc aggagctctt cargcgcatc tcggagcagt tcaactgccat 60
gttccgccgg aaggccttcc tccactggta cacaggcgag ggcctggacg agatggagtt 120
caccgaggct gagagcaaca tgaacgacct cgtctctgag tatcaagcag taccaggatg 180
ccaccgcaga agaggaggag gatttcggtg aggagggcca agaggaggcc taaggcagag 240
cccccatcac ctcaggcttc tcagtccctt tagccgtctt actcaactgc ccccttcttc 300
tccctcagaa tttgtgtttg ctgcctctat cttgtttttt gttttttctt ctgggggggt 360
ctagaacagt gcttggcaca tagtaggcgc tcaataaata cttggttgnt gaatgtctcc 420
t 421

<210> 121
<211> 206
<212> DNA
<213> Homo sapien

<400> 121
agctggcgct agggctcggg tgtgaaatac agcgttgtca gcccttgccg tcagtgtaga 60
aacccaagcc tgtaagggtc gtcttcgtcc atctgctttt ttctgaaata cactaagagc 120
agccacaaaa ctgtaacctc aaggaaacca taaagcttgg agtgccttaa tttttaacca 180
gtttccaata aaacggttta ctacct 206

<210> 122
<211> 131
<212> DNA
<213> Homo sapien

<400> 122
ggagatgaag atgaggaagc tgagtcagct acggggcargc gggcagctga agatgatgag 60
gatgacgatg tcgataccaa gaagcagaag accgacgagg atgactagac agcaaaaaag 120
gaaaagttaa a 131

<210> 123
<211> 231

```
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(231)
<223> n = A,T,C or G

<400> 123
gatgaaaatt aaatacttaa attaatcaaa aggcactacg ataccaccta aaacctactg      60
cctcagtggc agtakgctaa kgaagatcaa gctacagsac atyatcta atgaatgtta      120
gcaattacat akcargaagc atgtttgctt tccagaagac tatggnacaa tggtcattwg      180
ggcccaagag gatatttggc cnggaaagga tcaagataga tnaangtaaa g                231

<210> 124
<211> 521
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(521)
<223> n = A,T,C or G

<400> 124
gagtagcaac gcaaagcgct tggatttgag tctgtgggsg acttcgggtc cggctctctgc      60
agcagccgtg atcgcttagt ggagtgcctta gggtagttgg ccaggatgcc gaatatcaaa      120
atcttcagca ggcagctccc accaggactt atctcasaaa attgctgacc gectgggctt      180
ggagctaggc aaggtgggtga ctaagaaatt cagcaaccag gagacctgtg tggaaattgg      240
tgaaagtga cctgggagag gatgtctaca ttgttcagag tggntgtggc gaaatcaatg      300
acaatttaat ggagcttttg atcatgatta atgcctgcaa gattgcttca gccagccggg      360
ttactgcagt catcccatgc ttcccttatg ccccggcagg ataagaaaga tnagagccgg      420
gccgccaatc tcagccaagc ttgggtgcaa tatgtatatc gtagcagtgc agatcatatt      480
atcaccatgg acctacatgc ttctcaaatt canggctttt t                521

<210> 125
<211> 341
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(341)
<223> n = A,T,C or G

<400> 125
atgcaaaaag ggacacaggy ggttcaaaaa taaaaatttc tcttccccct ccccaaacct      60
gtacccccag tccccgacca caacccctt cctcccccg ggaaagcaag aaggagcagg      120
tgtggcatct gcagctggga agagagaggc cggggaggtg ccgagctcgg tgctgggtctc      180
tttccaaata taaatacgtg tgcagaact ggaaaatcct ccagcaccce ccacccaagc      240
actctcgggt ttctgcgggt gtttggagag gggcggnagg caggggcgcc aggcaccggc      300
tggtgcgggt ctactgcata cgctgggtgt gcaccccgcg a                341

<210> 126
<211> 521
```

<212> DNA
 <213> Homo sapien
 <220>
 <221> misc_reature
 <222> (1)...(521)
 <223> n = A,T,C or G

<400> 126

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aggctcgaga aggtcatgca ggtgcagatt gtccaggskc agccacaggg tcaagcccaa      60
caggcccaga gtggcactgg acagaccatg caggatgatgc agcagatcat cactaacaca      120
ggagagatcc agcagatccc ggtgcagctg aatgccggcc aqctgcagta tatccgctta      180
gcccagcctg tatcaggcac tcaagttgtg caggggacaga tccagacact tgccaccaat      240
gctcaacaga ttacacagac aqaggtccag caaggacacg agcagttcaa gccagttcac      300
aagatggaca gcagctctac cagatccagc aagtcaccat gcctgcgggc canqacctcg      360
ccagcccatg ttcatccagt caagccaacc agcccttcna cgggcaqgcc ccccagggtga      420
ccggcgactg aagggcctga gctggcaagg ccaangacac ccaacacaat ttttgccata      480
cagcccccag gcaatgggca cagcccttct tcccagagga c                                521

```

<210> 127
 <211> 351
 <212> DNA
 <213> Homo sapien

<400> 127

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tgagatttat tgcatttcat gcagcttgaa gtccatgcaa aggrgactag cacagttttt      60
aatgcattta aaaaataaaa gggaggtggg cagcaaacac acaaagtcct agtttctctg      120
gtccctggga gaaaagagtg tggcaatgaa tccaccact ctccacaggg aataaatctg      180
tctcttaaat gcaaagaatg tttccatggc ctctgqatgc aaatacacag agctctgggg      240
tcagagcaag ggatggggag aggaccacga gtgaaaaagc agctacacac attcacctaa      300
ttccatctga gggcaagaac aacgtggcaa gtcttggggg tagcagctgt t                                351

```

<210> 128
 <211> 521
 <212> DNA
 <213> Homo sapien

<400> 128

```

tccagacatg ctctgtctct aggcggggag caggaaaccag acctgctatg ggaagcagaa      60
agagtttaag gaaggtttcc ttccatttct gtctcttctc ttttgccttt gaacagtttt      120
taaatatact aatagctaag tcattttgca gccagggtccc ggtgaacagt agagaacaag      180
gagcttgcta agaattaatt ttgctgtttt tcaccccatr caaacagagc tgccctgttc      240
cctgatggag ttccatttct gccagggcac ggctgagtaa caggaagcca ttcaagaaay      300
gcgggtgtga aatcactgcc accccatgga cagaccctc actcttctct cttagccgca      360
gcgctactta ataaatatat ttatactttg aaattatgat aaccgatttt tcccatgctg      420
catcttaagg gcacttgcca gctcttatcc ggacagtcaa gcactgttgt tggacaacag      480
ataaaggaaa agaaaaaqa qaaaaacaacc gcaacttctg t                                521

```

<210> 129
 <211> 521
 <212> DNA
 <213> Homo sapien

<400> 129

```

tgagacggac cactggcctg gtccccctc atktgctgtc gtaggacctg acatgaaacg      60

```

```

caqatctagt ggcagagagg aagatgatga ggaacttctg agacgtcggc aqcttcaaga 120
aagacaatta atgaagctta attcaggcct yggacagttg atcttgaaag aagagatgga 180
gaaagagagc cgggaaaagt catctctgtt agccagtcgc taagattctc ccataaactc 240
agcttcacat attccatcat ctaaaactgc atctctccct ggctatggaa gaaatgggct 300
tcaccggcct gtttctaccg atttcctcct gtataaagc talggggtat tcaagcgggg 360
agtgcgagat taacagacac ttcagatgag ccacatgcct gcaatcagaa tggaccgagg 420
agtgtctatg cccaacatgt tggaaacaaa gatatttcca tatgaaatgc tcatggtgac 480
caacagaggg ccgaaaccaa atctcagaga ggtggacaga a 521

```

<210> 130

<211> 270

<212> DNA

<213> Homo sapien

<400> 130

```

tcactttatt tttcttgtat aaaaacccta tgttgtagcc acagctggag cctgagtccg 60
ctgcacggag actctgglyt gggctctgac yaggtgggca gtgaactcct gatagggaga 120
cttggtgaat acagctctcct tccagaggctc gggggtcagg tagctgtagg tcttagaant 180
ggcatcaaaq gtggccttgg cgaagttgcc cagggtggca gtgcaqccc gggtcgagg 240
gtagcagtca tcgataccag ccataatgag

```

<210> 131

<211> 341

<212> DNA

<213> Homo sapien

<400> 131

```

ctggaatata gaccctgat cgacaaaact ttgaacqagg ctgactgtgc caccgtccc 60
ccagccattc gctcctactg atgagacaag atgtggtgat gacagaatca gcttttgtaa 120
ttatgtataa tagctcatgc atgtgtccat gtcataactg tcttcatacg cctctgcact 180
ctggggaaga aggagtacat tgaagggaga ttggcaccta gtggctggga gcttgccagg 240
aaccagtggt ccaggggagc tggcacttac ctttgtccct tgcctcalle llytgagatg 300
ataaaactgg gcacagctct taataaaaat ataaatgaac a 341

```

<210> 132

<211> 844

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(844)

<223> n = A,T,C or G

<400> 132

```

tgaatgggga ggagctgacc caggaaatgg agcttgngga gaccaggcct gcaggggatg 60
gaaccttcca gaaagtggga tctgtggtgg tqcctcttgg gaaggagcag aagtacacat 120
gccatgtgga acatgagggg ctgcctgagc cctccaccct gagatggggc aaggaggagc 180
ctccttcac caccaagact aacacagtaa tcattgctgt tccggttgtc cttggagctg 240
tygtcatcct tggagctgtg atggcttttg tgalqaagag gaggagaaac acagggtggaa 300
aaggagggga ctatgctctg gctccaggct ccagagagct tgatatgtct cctccagatt 360
qtaagtggtg aagacagctg cctggtgtgg acttggtgac agacaatgtc ttcacacatc 420
tctgtgtaca tccagagacc tcagttctct ttagtcaagt gtctgatgtt cctgtgagt 480
ctgngggctc aaagtgaaga atgttgagc ccagtcaccc cctgcacacc aggacctat 540
cctgcactg cctgtgttc ccttcacag ccaaccttgc tgcctcagcc aaacattgg 600

```

```

ggacatctgc agcctgtong ctccatgcta ccttgacctt caactcccca ctccacact 660
gagaataata atttgaatgt ggggtggctgg agagatggct cagcgtgac tgctctcca 720
aaggtcctga gttcaaatcc cagcaaccac atgggtggctc acaaccatct gtaatgggat 780
ctaataccct ctctgcagt gctgaagac asctacagt tactlacata taataataaa 840
taag 844

```

<210> 133
 <211> 601
 <212> DNA
 <213> Homo sapien

```

<400> 133
ggcggggcgc gcgcgcccc gccacacgca cgcggggcgt gccagtttat aaaggcagag 60
agcaagcagc gagtcttgaa gctctgtttg gtgcttttga tccatttcca tgggtcctta 120
cagccgctcg tcagactcca gcagccaaga tgggtgaagca gatcgagagc aagactgctt 180
ttcagggaagc cttggagcgt gcaggtgata aacttgtagt agttgacttc tcagccacgt 240
gggtgtgggc ttgcaaaatg atcaagcctt tctttcatte cctctctgaa aagtattcca 300
acgtgatatt ccttgaaqta gatgtggatg actgtcagga tgttgncca gagtgtgaag 360
tcaaatgcat gccaacatcc caqtttttta agaagggaca aaagggtgggt gaattttctg 420
gagccataaa ggaanaagctt gaagccacca ttaatgaatt agtctaataca tgttttctga 480
aaatataacc agccattggc tatttaaaac ttgtaatttt ttaattttac aaaaatatca 540
aatatgaaga cataaacccm gttgccatct gcgtgacaat aaaacattaa tgctaacact 600
t 601

```

<210> 134
 <211> 421
 <212> DNA
 <213> Homo sapien

```

<400> 134
tcacataaga aatttaagca agttaccta tcttaaaaaa cacaacgaat gcatttttaat 60
agagaaaccc tccctccct ccacctccct cccccaaccc cctcatgaat taagaatcta 120
agagaagaag taaccataaa accaagtttt gtggaatcca tcatccagag tgettacatg 180
gtgattaggt taatattgcc ttcttaciaa atttctattt taaaaaaaat tataaccttg 240
attgcttatt acaaaaaaat tcagtaaaaa agttcaatat attgaaaaat gcttttcccc 300
tccctccag caccgtttta tatatagcag agaataatga agagattgct agtctagatg 360
gggaatctt caaattacac caagacgac agtgggttat ttacctccc ctctcataa 420
g 421

```

<210> 135
 <211> 511
 <212> DNA
 <213> Homo sapien

```

<400> 135
ggaaaaggatt caagaattag aggacttgct tgctrragaa aaagacaact ctcgctcgcat 60
gctgacagac aaagagagag agatggcgga aataagggat caaatgcagc aacagctgaa 120
tgactatgaa cagcttcttg atgtaaagt agccctggac atggaaatca gtgcttacag 180
gaaactctta gaaggcgaag aagagaggtt gaagctgtct ccaagccctt ctccccgtgt 240
gacagtatcc cgagcatcct caagtcgtag tgtaccgtac aactagagga aagcgggaaga 300
gggttgatgt ggaagaatca gaagcgaagt agtagtgta gcatctctca ttccgectca 360
accactggaa atgtttgcat cgaagaaatt gatgttgatg ggaaatttat ccogcttgaa 420
gaacacttct gaacaggatc aaccaatggg aaggcttggg agatgatcag aaaaattgga 480
gacacatcag tcagttataa atatacctca a 511

```


<210> 136
 <211> 341
 <212> DNA
 <213> Homo sapien

<400> 136
 catgggtttc accaggttgg ccaggttget cttgaacttc tgacctcagg tgatccaccc 60
 gcctcggcct cccaaagtgc tgggattaca ggcgtgagcc accnngcccq gcccccaaaq 120
 ctgtttcttt tgtctttaqc gtaaagctct cctgccatgc agtatctaca taactgacgt 180
 gactccacgc aagctcagtc actccgtggc ctltttctct tcccaqttct tctctctctc 240
 ttcaagttct gcctcagtcg aagctgcagg tcccagtta agtgatcagg tgagggttct 300
 ttgaacctgg ttctatcagt cgaattaatc cttcatqalg g 341

<210> 137
 <211> 551
 <212> DNA
 <213> Homo sapien

<400> 137
 gatgtgttgg accctctgtg tcaaaaaaaa cctcacaaaq aatcccccgc tttattacaga 60
 ngnagatgcn rttaaaaattt gggltatttt cnaacttttt tctgaggaca agtatccatt 120
 aattttttgtg tcagaagaga ttgaatacct gcttaagaag cttacagaag ctatggggagg 180
 aggtttggcag caaqaacaat ttgaacatta taaaaatcaac ttgatgaca glaaaaalg 240
 cttttctgca tgggaacctt rtgagcttat tggaaatgga cagttagca aaggcatgga 300
 ccggcagact gtgtctatgg caattaatga agtctttaat gaacttatat tagatgtgtt 360
 aaagcagggg tacatgatga aaaagggcca cagacggaaa aactggactg aaagatgggt 420
 tgtactaaaa cccaacataa tttcttacta tgtgagtgaq gatctgaag ataagaaagg 480
 aqacattctc ttggatgaaa attgctgtgt aqaagtcctt gcctgacaaa agatggaaaq 540
 aaatgccttt t 551

<210> 138
 <211> 531
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(531)
 <223> n = A,T,C or G

<400> 138
 gactgggttct ttatttcaaa aagacacttg tcaatattca gtrtcaaaac agttgcacta 60
 ttgatttctc tttctcccaa tgggcccaca agagaccnca taaaaggaga gtacatttta 120
 agccaataag ctgcaggatg tacacctaac agacctccta gaaaccttac cagaaaaagg 180
 ggactgggta gggaaggaaa cttaaaagat caacaaactg ccagcccacg gactgcagag 240
 gctgtcacag ccagatgggg tggccagggt gccacaaacc caaagcaaaq tttcaaaata 300
 atataaaat taaaaagtgt tgtacataag ctattcaaga tttctccagc actgactgat 360
 acaaagcaca attgagatgg cacttctaga gacagcagct tcaaacccag aaaaggggtga 420
 tqagatgaag tttcacatgg ctaaatcagt ggcacaaaca cagtcttctt tctttctttc 480
 ttcaaggan gcaggaaaac aattaagtgg tcaacttaac ataagggga c 531

<210> 139
 <211> 521
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(521)
 <223> n = A,T,C or G

<400> 139
 tgggtgggca ccatggctgg gatcaccacc atcgaggcgg tgaagcgcaa gatccaggtt 60
 ctgcagcagc aggcagatga tgcagaggag cgaactgagc gcctccagcg agaagttgag 120
 ggagaaagcg gggcccgga acaggctgag gctgaggtgg cctccttgaa ccgtaggatc 180
 cagctgggtg aaçaagagct ggaccgtgct caggagcgcc tggccactgc cctgcaaaaq 240
 ctggaagaag ctgaaaaagc tgctgatgag agtyagagag gtatgaaggt tattgaaaac 300
 cgggccttaa aaçatgaaga aaagatggaa ctccaggaaa tccaactcaa agaagctaaq 360
 cacattgcag aaçaggcaga taggaagtat gaagaggtgg ctcgtaaggt ggtgatcatt 420
 gaaggagact tggaaaccga cagaaggaac gagcttgagc ttggcaaaaq tcccgttgoc 480
 cagagatggg atçaaccaga ttagactgat ggaccanaac c 521

<210> 140
 <211> 571
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(571)
 <223> n = A,T,C or G

<400> 140
 aggggcnegc ggtgcgtggg ccactgggtg accgacttag cctggccaga ctctcagcac 60
 ctggaagcgc cccgagagtg acagcgtgag gctgggaggg aggacttggc ttgagcttct 120
 taaactctgc tctgagcctc ctgtgcgctt gcatttaqat ggctcccgca aagaagggtg 180
 gcgagaagaa aaagggccgt tctgccatca acgaagtggc aaccggayaa tacaccatca 240
 acattcacaa gcgcattccat ggagtgggct tcaagaagcg tgcacctcgg gcactcaaaq 300
 agattcggaa atttgccatg aaggagatgg gaaactccaga tgtggcattt gacaccaggg 360
 tcaacaaaagc tgtctggggc aaaggataaa ggaatgtgcc ataccgaatc cgggtgtcgg 420
 ctgtccagaa aacgtaatga ggaatgaagat tcaaccabata agctatatac ttgtgttacc 480
 tatgtacctg ttaccacttt caaaatcta cagacagtc aatgtggatga gaaactaatcg 540
 ctgactgtca gatcaataaa agttataaaa t 571

<210> 141
 <211> 531
 <212> DNA
 <213> Homo sapien

<400> 141
 tcgggagcca cacttggccc tcttctctc caaagsqcca gaacctcctt ctctttggag 60
 aatggggagg cctcttggag acacagaggg ttccaccttg gatgacctct agagaaattg 120
 cccaagaagc ccaccttctg gtcccaacct gcagacccca cagcagtcag ttggtcaggg 180
 cctgctgtag aaggtcactt ggctccattg nctgcttcca accaatgggc aggagagaag 240
 gcctttattt ctgcgccacc cattctctct gtaccagcac ctccgttttc agtcagtgtt 300
 gtccagcaac ggtaccgttt acacagtcac ctccagacaca ccatttcacc tcccttgcca 360
 agctgttagc cttagagtga ttgcagtga cactgtttac acaccgtgaa tccattccca 420
 tcagtccatt ccagttggca ccagcctgaa ccatttggtt cctggtgtta actggagttc 480
 tgtttacaag gtggagtcgg ggcttgctga ctctcttcca ttgtagggca c 531

<213> 142
<211> 491
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(491)
<223> n = A,T,C or G

<400> 142
acctagacag aaggtgggtg agggagcact ggtaggagcc tgaggcaatt ccttggtagt 60
ttgtcctgaa accctactgg agaagtcagc atgaggcacc tactgagaga agtgcccaga 120
aactgctgac tgcactctgt agaggttaac aqtaaaagagg tagaagtgtg ttcttgaatc 180
agagtggaaag cgtctcaagy gtcccacagt ggaggtccct gagctacctc ccttccgtga 240
gtgggaagag tgaagcccat gaagaactga gatgaagcaa ggatggggtt cctgggctcc 300
aggcaagggc tgtgctctct gcagcagggg gcccacagag tcagaagaaa agaactaatc 360
atctgtttga aaaaaccttg cccggatact agcggaaaaac tggaggcggg ggtgggggca 420
caggaaaagt gaaagtattt gatggagagc agagaagcct atgcacagtg gccgagttca 480
cttgaagatg g

<210> 143
<211> 515
<212> DNA
<213> Homo sapien

<400> 143
ttcaagcaat ttaacaagt atatgtagat tagagtgagc aaaatcatai acaattttca 60
tttccagtgt ctattttcca aattgtttctg taatgtcgtt aaaattactt aaaaattaac 120
aaagccaaaa attatattta tgacaagaaa gccatcccta catataatctt acctttccac 180
tcaccggccc atctccttcc tcttttctct aactatgcca ttaaaaactgt tctactgggc 240
cgggcgtgtg gctcatgcct gtaatccagc cattttggga ggccaaggca ggcggatcat 300
gaggtcaaga gattgagacc atcctggcca acatggtgaa accccgctc gactaagaat 360
acaaaaatta gctgggcatt gtggcgcatg cctgtatctt cagctactcg ggaggtcgag 420
gcagaaagat cgtttgaaac cgggaaggca aggatgcagt gagccccgat cgcaccactg 480
cactctagcc tgggngacag acgagactc tgcctc

<210> 144
<211> 340
<212> DNA
<213> Homo sapien

<400> 144
tgtgccagtc tacaggccta tcagcagcga ctcttcagc aacagatggg gtccccctgtt 60
cagcccaacc ccatgagccc ccagcagcat atgtcccaa atcaggccca gtccccacac 120
ctacaaggcc agcagatccc taattctctc tccaatcaag tgcgctctcc ccagcctgtc 180
cctttctcac ggccacagtc ccagccccc cactccagtc cttccccaaq gatgcagcct 240
cagccttctc cacaccagc ttccccacag acaagttccc cacatcctgg actggtagt 300
gcccaggcca accccatgga acaagggcct tttgccagcc

<210> 145
<211> 630
<212> DNA
<213> Homo sapien

<400> 145

tgtaaaaact	tgtttttaaa	tttgtataaa	ataaagggtg	tccatgcccc	cgggggctgt	60
aggaaatcca	agcagaccag	ctgggggtgg	gggatgtagc	ctacctcggg	ggactgtctg	120
tctcaaaaac	gggctgagaa	ggcccgtcag	gggcccaagt	cccaacagaga	ggcctgggat	180
actcccccaa	cccagggggc	agactgggca	gtggcgagcc	cccatcgctc	cccagaggtg	240
gccacaggct	gaaggagggg	cctgaggcac	cgcagcctgc	aacccccagg	gctgcagtcc	300
actaaacttt	tacagaataa	aaggaaacatg	gggatgggga	aaaaagcacc	aggtcaggca	360
ggggccgagc	gccccagatc	ccaggagggc	caggacacag	gatgccagca	ccaccctagc	420
agctcccaca	gctcctggca	caggaggccg	ccacggattg	gcacaggccg	ctgctggcca	480
tcacgccaca	tttggaagaa	ttgtcccgac	agaggtcagc	tcggaggagc	tcctcgtggg	540
cacacactgt	acgaacacag	atctccttqt	taatgacgta	cacacggcgg	aggtgcggg	600
gacagggcac	gggagggtctc	agccccactt				630

<210> 146

<211> 521

<212> DNA

<213> Homo sapien

<400> 146

atggctgctg	gatttaggtg	qtaatagggg	ctgtggggcca	taaatctgaa	gcottgagaa	60
ccttgggtct	ggagagccat	gaagagggaa	ggaaaagagg	gcaagtccctg	aacctaacca	120
atgacctgat	ggattgtctg	accaagacac	agaagtgaag	tctgtgtctg	tgcacttccc	180
acagactgga	gttttttggtg	ctgaatagag	ccagttgcta	aaaaattggg	ggtttgggga	240
agaaatctga	ttgttgtgtg	tattcaatgc	gtgattttaa	aaataaacag	caacaccaat	300
aaaaaccctg	actggctgtt	ttttccctgt	attctttaca	actatttttt	gacctcttga	360
aaattattat	acttcacctt	aatggaagac	tgctgtgttt	gtggaaattt	tgtaattttt	420
taattttatt	tattctctct	cctttttatt	ttgcttgcaq	aatccgttga	gagactaata	480
agqcttaata	tttaattgat	ttgtttaata	tgtatataaa	t		521

<210> 147

<211> 562

<212> DNA

<213> Homo sapien

<400> 147

ggcatgagag	cgcactcggc	ggacgcangg	gcggcgggga	gcacacggag	cactgcaggc	60
gccgggtctg	gacagcgtct	tcgctgctgc	tggaatagtcg	tgttttcggg	gatcgaggat	120
actcaccaga	aaccgaaaat	gccgaaaacca	atcaatgtcc	gagttaccac	catggatgca	180
gagctggagt	ttgcaatcca	gccaaataca	actggaaaac	agctttttga	tcagggtgga	240
aagactatcg	gcctccggga	agtgtggtac	tttgccctcc	actatgtgga	taataaagga	300
tttccctacct	ggctgaagct	ggataagaaq	gtgtctgccc	aggaggtcag	gaaggagaat	360
ccctccagct	tcaagttccg	ggccaaaagt	ctaccctgaa	gatgtggctg	aggagctcat	420
ccaggacatc	accagaaaac	ttttcttctc	tcaagtgaag	gaagggaatcc	ttagcgatga	480
gatctactgc	cccccttgat	actgccgtgc	tcttggggtc	ctacgcttgt	gcatgccaaq	540
tttggggact	accaccaaga	ag				562

<210> 148

<211> 820

<212> DNA

<213> Homo sapien

<400> 148

gaaggagctg	ggatactcag	cattgatgca	ccccaatctc	aaagcggcat	tcttcggcag	60
gtctctggga	caatctctag	ggtcactacc	tggaactctg	ttagggtaca	actgaatgct	120
gaaaggaaaq	aacacctgca	gaaccggaca	gaaattccac	ccggcgatca	gctgattgat	180

```

ctcggtcgac cagaagtcac ggctaaagat gacgaaggac ttgtcaattc cctgggcttt 240
tcgaagtgcg tccagcagca ylctgaggta ttggggcgcg ttatgcacct ggaccaccag 300
caccagctcc cggggggccc aggtgccagc cttatctaca ttccctcaggg tctgatcaac 360
gttcagctgg tacaccaggg acccgtaccg cagcqlcagg ttgtccgctc gggtcggggg 420
accgccggga ccagggaagc cgcgcagacy ttggagaacc tgcggatgnc cacagccaca 480
gaggggtggt ccccccgcgc gccgcgcgca cccgcgcgcg gtccqcgctc cagcaacggg 540
ggggcgaggg cctcgttctt cctttgtcgc ccattgctgc tccagaggac gaagccgacg 600
gcggccacca ctagcgtcag gatttagcac ttccgrrtgi agatgcggaa cctcatggtc 660
tccagggcgc ggagcgcagc tacagctcga gcgtcggcgc cgcgcctagg agccgcggct 720
cggcttcgct tccgtccctc ccattcagca ccacgggtcc cggaaaaagc tcagccscgg 780
tcccaaccgc accctagctt cgttacctgc gcctcgtttg 820

```

<210> 149

<211> 501

<212> DNA

<213> Homo sapien

<400> 149

```

cagattttta ttgcaqtcg tcaactggggc cgtttcttgc tgcctatttg tctgtatgac 60
tgcctctcca gctgcattgc cagqcccaag gccttgatga catctcgcag ggctgagaaa 120
tgcttgcttt gctgggcnag agcagattcc gctttgttca caaaggctct caggtcatag 180
tctggctgct cggctcatctc agagagctca agccagctct gtccttgctg tatgatctcc 240
ttgagctctt ccatagcctt ctctccagc tccclgatct gagtcatggc ttcgtaaaag 300
ctggacatct gggaagacag ttccctctct tccctggata aattgcctgg aatcagcgcc 360
ccgttagagc aggettcctc ctctctctgt tccatttqaa tcaactgctc tccactgggc 420
ccactgtggg ggctcagctc cttgacctg ctgcatatct taagggtgtt taaaggatat 480
tcacaggagc ttatgcctgg t 501

```

<210> 150

<211> 511

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(511)

<223> n = A,T,C or G

<400> 150

```

ctctcttgg tccatgaacc caagttgaaa gtggacttaa ccaagtatct cgaqaaccac 60
gcattctgct ttgactttgc atttgatgaa acagcttcga atgaagttgt ctacagggtc 120
acagcaaggc cactgggtaca gacaatcttt gaaggtggaa aagcaacttg ttttgcatat 180
ggccagacag gaagtggcaa gacacatact atgggcggag acctctctgg gaaaqcccag 240
aatgcatcca aagggtatct tggcatggcc ttccgggacg tcttcttctg aagaatcaac 300
cctgctaccg yaagttgggc ctggaagtct atgtgacatt ctccagatgc tacaatggga 360
agctgtttga cctgctcaac aagaaggcca agcttgccgc tgcctggaaga cggcaagcaa 420
caggtgcaag tgggtggggc ttgcaggaac atctggntaa ctctgcttga tgaaggcant 480
caagatgata gacatgggca gcgcctgcag a 511

```

<210> 151

<211> 566

<212> DNA

<213> Homo sapien

<400> 151

tcccgaaatc	aagcgacaaa	ttggawagt	aaatggaaga	tgcctatcat	gaacatcagg	60
caaatctttt	gcgccaagat	ctgatgagac	gacaggaaga	attaagacgc	atggaagaac	120
ttcacaatca	agaaatgcag	aaacgtaaa	aaatgcaatt	gaggcaagag	gaggaacgac	180
gtagaagaga	ggaagagatg	atgattcgtc	aacgtgagat	ggaagaacaa	atgaggcgcc	240
aaagagagga	aagtacagc	cgaatgggt	acatggatcc	acgggaaaga	gacatgcgaa	300
tgggtggcgg	aggagcaatg	aacatgggag	atccctatgg	ttcaggaggc	cagaaatttc	360
cacctctagg	aggtggtggt	ggcataggtt	atgaagctaa	tcctggcggt	ccaccagcaa	420
ccatgagtgg	ttccatgatg	ggaagtgaac	tgcgtactga	gcgctttggg	caggggaggtg	480
cggggcctgt	gggtggacag	ggtcctagag	gaatggggcc	tggaaactca	gcaggatatg	540
gtagaggggag	agaagagtac	gaaggc				566

<210> 152

<211> 518

<212> DNA

<213> Homo sapien

<400> 152

ttcgtgaaga	ccctgactgg	taagaccatc	actctcgaag	tggagcccca	gtgacaccat	60
tgagaatgtc	aaggcaaa	tcgaagacaa	ggaaggtatc	cctcccgacc	agcakaaggt	120
gatctttgct	gggaaacagc	tggaagatgg	acgcaccctg	tctgactaca	acatccagaa	180
agagtccacc	ctgcacctgg	tgcctcgtct	cagaggtggg	atgcaaatct	tcgtgaagac	240
cctgactggt	aagaccatca	ccctcgaggt	ggagcccagt	gacaccatcg	agaatgtcaa	300
ggcaaaagtc	caagataaag	aaggtatccc	tcctgatcag	cagaggttga	tccttgctgg	360
gaaacagctg	gaagatggac	gcaccctgtc	tgaactacaac	atccagaaa	agtcactct	420
gcacttggtc	ctgcgcttga	gggggggtgt	ctaagtttcc	ccttttaagg	tttcaacaaa	480
tttcattgca	ctttcccttc	aataaagttg	ttgcattc			518

<210> 153

<211> 542

<212> DNA

<213> Homo sapien

<400> 153

gcgcgggtgc	gtgggccact	gggtgaccga	cttagcctgg	ccaqactctc	agcacttga	60
agcgccccga	gagtgcacgc	gtgaggctgg	gagggaggac	ttgccttgag	cttgttaaac	120
tctgtctctg	gcctccttgt	cgctgcatt	tagatgcctc	ccgcaaaaga	gggtggcng	180
aagaaaaagg	gcccgttctg	catcaacgaa	gtggttaacc	gagaatacac	catcaacatt	240
cacaagcgca	tcctatggag	gggtctcaag	aaqcgtycac	ctcgggcact	caaagagatt	300
cggaaaattg	ccatgaagga	gatgggaact	ccagatgtgc	gcattgacac	caggctcaac	360
aaagctgtct	gggccaaaag	aataaggaat	gtgccatacc	gaatccgtgt	gcggctgtcc	420
agaaaaagta	atgaggatga	agattcacca	aataagctat	atactttggt	tacctatgta	480
cctgttacca	ctttcaaaaa	tctacagaca	gtcaatgtgg	atgagaacta	atcgctgatc	540
gt						542

<210> 154

<211> 411

<212> DNA

<213> Homo sapien

<400> 154

aattctttat	ttaaatcaac	aaactcatct	tcctcaagcc	ccagaccatg	gtaggcagcc	60
ctccctctcc	atccctcac	cccaccctt	agccacagtg	aagggaatgg	aaaatgagaa	120
gccacgaggg	ccccgccag	ggaaggtctc	cccagatgtg	tggtagcac	agtcagtcca	180
gctgtggcty	gggcagcagc	tgccacaggc	tcctccctat	aaattaaagt	cctgcagcca	240
cagctgtggg	agaagcatac	ttgtagaagc	aaggccagtc	cagcatcaga	aggcagaggc	300

```

agcatcagtg actccacagc atggaatgaa cggaggacac agagctcaga gacagaaacg      360
gccaggggga agaaggagag acagaatagg ccaggggcatg gcggtqaggg a              411

```

```

<210> 155
<211> 421
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(421)
<223> n = A,T,C or G

```

```

<400> 155
tgatgaatct ggggtggctg gcagtagccc gagatgatgg gctcttctct ggggatccca      60
actggttccc taagaaatcc aaggagaatc ctccgaactt ctccgataac cagctgcaag    120
agggcaagaa cgtgacucgg ttacagatgg gcaccaaccg cggggcgctc canqcaggca    180
tgactggcta cgggatgcc agccagatcc tctgatccca ccccaggcct tgccctgcc     240
ctcccacgaa tggttaatat atatgtagat atatatttta gcagtgcacat tcccagagag    300
ccccagagct ctcaagctcc tttctgtcag ggtggggggg tcaagcctgt cctgtcacct    360
ctgaagtgcc tgctgcacac ctctccccc tgcctactaa tacattccct tcccatagc     420
c                                          421

```

```

<210> 156
<211> 670
<212> DNA
<213> Homo sapien

```

```

<400> 156
agcggagctc cctccccctgg tggctacaac ccacacacgc caggctcagg catcgagcag      60
aactccagcg actgggtaac cactgacatt cagggtgaagg tgcgggacac ctacctggat    120
acacaggtgg tgggacagac aggtgtcacc cgcagtgtcc cggggggcat gtgctctgtg    180
tacctgaagg acagtgaaga ggttgtcagc atttccagtg agcacctgga gccctaccac    240
cccaccaaga acaacaaggt gaaagtgcac ctggggcgaq atcgggaagc caccggcgctc    300
ctactgagca ttgatgggta gcatggcatt gtccgtatgg accttgatga gcagctcaag    360
atcctcaacc tccgcttctc ggggaagctc ctggaaacct gaagcaggca gggccgctgg    420
acttcgtcgg atgaagagtg atccctcttc ctcccttggc ccttggtgtg gacacaagat    480
cctcctgcag ggctagcggg attgttctgg atttcccttt gtttttccct llaaggtlcc     540
atcttttccc tccctgggtg ccatgggaat ctgagtagag tctgggggag ggtccccacc    600
ttcctgtacc tctcccccac agcttgcttt tgttgaaccg tctttcaata aaaaagaagct    660
gtttgtgtcta                                670

```

```

<210> 157
<211> 421
<212> DNA
<213> Homo sapien

```

```

<400> 157
ggttcacagc actgctgctt gtgtgttgcg ggcagggaat tccaggctca caaggctatc      60
ttagcagctc gttctccggt ttttagtgcc atgtttgaac atgaaatgga ggagagcaaaa    120
aagaatcgag ttgaaatcaa tgatgtggag cctgaagttt ttaaggaaat gatgtgcttc    180
atttacacgg ggaaggctcc aaacctcgac aaaaatggctg atgatttgct ggcagctgct    240
gacaagtatg ccttgagcgg cttaaaagtc atgtgtgagg atgcctctct cagtaacctg    300
tcctgtggaga acgtgcaga aattctcacc ctggccgacc tccacagtgc agatcagttg    360
aaaactcagg cagtggattt catcaactat catgcttcgg atgtcttgga gacctcttgg    420

```

9

421

<210> 158
 <211> 321
 <212> DNA
 <213> Homo sapien

<400> 158
 tcgtagccat ttttctgctt ctttgagaa tgacgccaca ctqactgctc attgicgttg 60
 gttccatgcc aattggtgaa atagaacctc atccggtagt ggagccggag ggacatcttg 120
 tcatcaaccg tgatgggtgcg atttgagaca taccagagct tgggtgtctc gccatacagg 180
 gcaaagagg tgtgacaaag aggagagata cggcatgctt gtgcagccct gatqcacagt 240
 tectctgctg tgtactctcc actgcccacg cggaggggct cctctgcuga cagatagaa 300
 atcacttcca cccctggtt g 321

<210> 159
 <211> 596
 <212> DNA
 <213> Homo sapien

<400> 159
 tggcacactg ctcttaagaa actatgawg ttrgaqatt ttttgtgtat gtttttgact 60
 cttttgagtg gtaatcctat gtgcllllat agatgracat acctccttgc acaaatggag 120
 gggaattcat tttcatcact gggagtgtcc ttaqtgtata aaaaccatgc tggatatagg 180
 ctccaagttg taaaaatgaa agtgacttto aaqaaaaata ggggatggtc caggatctcc 240
 actgataaga ctgtttttaa gtaacttaag gacctttggg tctacaagta tatgtgaaaa 300
 aaatgagact tactgggtga ggaattcat tgtttaaaga tggctgtgtg tgtgtgtgtg 360
 tgtgtgtgtg ttgtgtgtgt tttgttttr taaggagggg aatttattat ttaccgttgc 420
 ttgaaattac tgkgtaaata tatqlytgar aatgatttgc tytttgvcm aaaaaattag 480
 gvctgtataa gtwtctarat cmtccctggg xgttgatytt ccmagatatt gatgatamcc 540
 cttaaaattg taaccygcct ttttccctt gctytcmatt aaagtctatt cmaaag 596

<210> 160
 <211> 515
 <212> DNA
 <213> Homo sapien

<400> 160
 gggggtaggc tctttattatg acggttattg ctgtactaca ggggcagagt gcagtgtaa 60
 cagtgtcaga ggcccgcgtt cagcccaaga atgtggattt tctctcccta ttgalcaca 120
 tgggtgggtt tcttcagaaa agcccagag gcaggagacca gtgagctcca aggttagaa 180
 tggaaactgga aggcctcagt cacatgctgc ttcacgctt ccaggctggg cagcaaggag 240
 gagatgccc tgacgtgcc ggtctcccca tctgacacca gtgaagtctg gtaggacagc 300
 agccgcacgc ctgcctctgc caggaggcca atcatggtag gcagcatttc agggtcaga 360
 gtctgagtc ggaataggag caggggcagg tccctgcgga gaggcacttc tggcctgaag 420
 acagctccat tgagccctg cagtacaggy gtagtgcctt ggaccaagcc cacagcctgg 480
 taaggggcgc ctgccagggc caccggcagg ayyca 515

<210> 161
 <211> 936
 <212> DNA
 <213> Homo sapien

<400> 161
 taatttctta gtcgtttgga atccttaagc atgcaaaagc tttgaacaga agggttcaca 60


```

daaggaaccag ggttqtctta tggcatccag ttaagccaga gctqggaatg cctctgggtc 120
atccacatca ggagcagaag cacttgactt gtgggtactg ctgccacggc ttgggcggcc 180
accagcccca cgtccacctc glectccctt gccgccacgt cctgggcggc caaggctctc 240
aaaattgata tccagctgag acqttatata atttgtctgc ttccggaaat gatggtccat 300
aaccgaatct tcagcatgag cctctcactt ctttgattta tgaagaacaa atccctctct 360
ccactgccca tcagcacctt ctttgggttt tgggataata aattctactt ttgcccggtc 420
cttattttga atagccttcc actcatccaa agtcactctt ttgggacctt cctcttttac 480
ctcttcaact tcattctctt tttttcagt gtctgccact ggatgatgtt ctccaccttc 540
aggtgtttcc tcagtcacat ttgattgata caagtcagtt aattcgtctt tgacagttcc 600
ccagtgttga gatccgtac ctccacgttt gtctcgttgc ttccggccag atctatcact 660
tccactatgc ctatcaaat caggtttgcc acgagatca aatccatctc ctgggcccat 720
tccacgtcca cggcccccctt gacctcttcc aaqaccacca cgaactcgaa taggtcggtc 780
aataatcggt ctatcaactg aaaattcgcc tcttcacccc tttctctcaa gtggcttttc 840
gaactcttctg tcacgaggtg gtcccttttc ttgtcttcta tcaattatct tcccttcacc 900
ctgaagttgt tgatcaggtc ttcttccaac tegtgc 936

```

<210> 162

<211> 950

<212> DNA

<213> Homo sapien

<400> 162

```

aagcggatgg acctgagtca gccgaatcct agcccccctc cttgggcctg ctgtgggtgt 60
cgacatcagt gacagacgga agcagcagac catcaaggct acgggaggcc cggggcgcct 120
gcgaagatga agtttggctg cctctccttc cggcagcctt atgctggctt tgtcttaaat 180
ggaatcaaga ctgtggagac gcgtlgygct cctctgctga gcagccagcg gaactgtacc 240
atcgccctcc acattgctca cagggaactgg gaaqgcgatg cctgtcggga gctgctggtg 300
gagagactcg ggatgactcc tgctcagatt caggcctttc tcaggaaaag ggaaggttt 360
ggtcggaggag tgatagcggg actcgttgac attggggaaa ctttgcaatg ccccgaagac 420
ttaactcccg atgaggttgr ggaactagaa aatcaagctg cactgaccaa cctgaagcag 480
aagtacctga ctgtgatttc aaaccccagg tggttactgg agcccatacc taggaaagga 540
ggcaaggatg tattccaggt agacatccca gacacactga tccctttggg gcatgaagly 600
tgacaagtgt gggctcctga aaggaaatgt cergagaaac cagctaaatc atggcacctt 660
caatttgcca tegtacgca gacctgtata aattagggtta aagatqaatt tccactgctt 720
tgagagagtc caccactaa gcaactgtga tgtaaacagg ttcctttgct cagatgaag 780
aagttagggg tggggctttc cttgtgtgat gcctccttag gcnacagggc aatgtctcaa 840
gtactttgac cttagggtag aaggcaagc tgccagtaaa tgcctcagca ttgctgctaa 900
ttttggtcct gctagtttct ggattgtaca aataaagtgt ttgtagatga 950

```

<210> 163

<211> 475

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(475)

<223> n = A,T,C or G

<400> 163

```

tcgagcggcc gcccgggcag gtgtcqaat ccagcacggg aggcgtggc ttglagttgt 60
ctctcggctg cccattgctc tccactcca cggcgatgtc gctgggatag aagcctttga 120
ccaggcaggt caggctgacc ttgttcttgg tcactctctc cgggatggg ggcagggtgt 180
acacctgtgg ttctcggggc tgcccttttg ctttggaat ggttttctcg atgggggctg 240
ggagggcttt gttggaagac ttgcacttgt actccttgc attcaaccag tccgtgtgca 300

```

```

ngacgggtgag gacgctnacc acacgggtacg ngetgggtgta ctgctccrcc cgcggctttg      360
tcttggcatt atgcacctcc atgacgtcca cytaccatt gaacttgacc tcagggtctt      420
cgtgggtcac gtccaccacc acgcatgtaa cctcaaanct cggncgcgan cacgc      475

```

```

<210> 164
<211> 476
<212> DNA
<213> Homo sapien

```

```

<400> 164
agcgtgggtcg cggccgaggt ctgaggttac atgcgtgggtg gtggacgtga gccacgaaga      60
ccctgaggtc aagttcaact ggtacgtgga cggcgtggag gtgcataatg ccaagacaaa      120
gcgcggggag gagcagtaca acagcacgta ccgtgtggtc agcylctca ccgtcttgca      180
ccaggactgg ctgaatggca aggagtacaa gtgcaaggtc tccaacaaaq ccctccagc      240
ccccatcgag aaaaccatct ccaaagccaa agggcagccc cgagaaccac aggtgtacac      300
cctgccccca tcccgggagg agatgaccaa gaaccaggtc agcctgacct gcctgggtcaa      360
aggcttctat cccagcgaca tcgccgtgg agtgggagag caatgggcag ccggagaaca      420
actacaagac cacgcctccc gtgctggact ccgacacctg ccgggcgggc gctcga      475

```

```

<210> 165
<211> 256
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(256)
<223> n = A,T,C or G

```

```

<400> 165
agcgtgggtcn cggccgaggt cccaaccaag gctgcacct ggatgccatc aaagtcttct      60
qcaacatgga qactggtgaq acctgcgtgt accccactca gcccaagtgt gcccaaga      120
actggtacat cagcaagaac cccaaggaca agaggcatgt ctggttcggc gaaqacatga      180
ccgatggatt ccagttcgag tatggcggcc agggctccga cctgcccgar gtqgacctgc      240
ccggcgcgnc gctcga

```

```

<210> 166
<211> 332
<212> DNA
<213> Homo sapien

```

```

<400> 166
agcgtgggtcg cggccgaggt caagaacccc gcccgcaact gccgtgacct caagatgtgc      60
cactctgact ggaagagtgg agagtactgg attgaccca accaaggctg caacctggat      120
gccatcaaaq tcttctgcaa catggagact ggtgagacct gcgtgtaccc cactcagccc      180
agtgtggccc agaagaactg gtacatcac aagaacccca aggacaagag gcatgtctgg      240
ttcggcgaga gcatgaccga tggattccag ttcagatag gcggccaggg ctccgacct      300
gccgatgtgg acctgcccgg gcggccgctc ga

```

```

<210> 167
<211> 332
<212> DNA
<213> Homo sapien

```

```

<220>

```

<221> misc_feature
 <222> (1)...(332)
 <223> n = A,T,C or G

<400> 167
 tcgagcggtc gcccgggcag gtccacatcg gcagggtcgg agccctggcc gccatactcg 60
 aactggaalc catcggnat gctctcgccg aaccagacat gcctcttgn cttgggggttc 120
 ttgctgatgt accagttctt ctgggccaca ctgggctgag tggggtagac gcagggtctca 180
 ccantctcca tgttgcaaaa gactttgatg gcattccagg tgcagccttg gttggggcca 240
 atccagtact ctccactctt ccagacagag tggcacatct tgaagtcacg gcagggtgcg 300
 gcgggggtct tgacctcggt cgcgaccacg ct 332

<210> 168
 <211> 276
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(276)
 <223> n = A,T,C or G

<400> 168
 tcgagcggtc gcccgggcag gtccctctca gagcggtagc tgttcttatt gccccggcag 60
 cctccataga tnaagttatt gcangagttc ctctccacgt caaagtacca gcgtgggaag 120
 gatgcacggc aaggcccagt gactgcgttg gcggtgcagt attcttcata gttgaacata 180
 tcgctggagt ggacttcaga atcctgcctt ctgggagrac ttgggacaga ggaatccgct 240
 gcattctcgc tggtagacct cggccgcqac cagcgt 276

<210> 169
 <211> 276
 <212> DNA
 <213> Homo sapien

<400> 169
 agcgtggtcg cggccgaggt ccaccagcag gaatgcagcg gattcctctg tcccaagtcg 60
 tcccagaagg caggattctg aagaccactc cagcgatatg ttcaactatg aagaatactg 120
 caccgccaac gcagtcactg ggccttgccg tqcatccttc ccacgctggt actttgacgt 180
 ggagagggaac tcttgaata acttcactta tggaggtcgc cggggcaata agaacagcta 240
 ccgctctgag gaggacctgc ccggggcgcc gctcga 276

<210> 170
 <211> 332
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(332)
 <223> n = A,T,C or G

<400> 170
 tcgagcggtc gcccgggcag gtccacatcg gcagggtcgg agccctggcc gccatactcg 60
 aactggaalc catcggtcat gctctcgccg aaccagacat gcctcttctc cttgggggttc 120
 ttgctgatgt accagttctt ctgggccaca ctgggctgag tggggtagac gcagggtctca 180

```

ccaqtctcca tcttccagaa gactttgatg gcacccaggt tgcagccttg cttgggggtca 240
atccagtlact ctccactctt ccagccagaa tggcacatct tgaggtcacg gcangtgccg 300
gcgggggttct tgacctcggc cgcgaccacg ct 332

```

```

<210> 171
<211> 333
<212> DNA
<213> Homo sapien

```

```

<400> 171
agcgtggtcg cggccgaggt caagaaaccc cgcgcgcacc tgcctgacc tcaagatgtg 60
ccactctggc tggaaagagt gagagtlact gattgacccc aaccaaggct gcaacctgga 120
tgccatcaaa gtcttctgca acatggagac tgggtgagacc tgcgtgtacc ccactcagcc 180
cagtgtggcc cagaagaact ggtacatcag caagaacccc aaggacanga gqcatgtctg 240
gctcggcgag agcatgaccg atggaltcca gttcgagtat ggcggccagg gctccgaccc 300
tgccgatgtg gacctgcccg ggcggccgct cga 332

```

```

<210> 172
<211> 527
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(527)
<223> n = A,T,C or G

```

```

<400> 172
agcgtggtcg cggccgaggt cctgtcagag tggcactcgt agzagntcca ggaacctga 60
actgtaaggg ttcttcatca gtgccaacag gatgacatga aatgatgtac tcagaagtgt 120
cctgnaatgg ggcccatgan atggttgnet gagagagagc ttcttgtcct acattcggcg 180
ggatgtgtct tggcctatgc cttatggggg tggcgttgn ggcggtgng gtccgcctaa 240
aaccatgttc ctcaaagatc atttgttgcc caacactggg ttgctgacca naagtgccag 300
gaagctgaal accatttcca gtgtcatacc nagggtgggt gacgaaaggg gtcttttgaa 360
ctgtggaaag aacatccaaq atctctgntc catgaagatt ggggtgtgga agggttacca 420
gttggggaag ctgctgtctt ttttccttcc aatcangggc ccgctcttct gaataattct 480
cagggcaatg acataaattg tatattcggg tcccqgttcc aggccag 527

```

```

<210> 173
<211> 635
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(635)
<223> n = A,T,C or G

```

```

<400> 173
tcgagcggcc gcccgggcaq gtccaccaca cccaattcct tgcctgtatc atggcagccg 60
ccacgtgccca ggattaccgg ctacatcacc aagtatgaga agcctgggtc tcctccacga 120
gaagtgtgct ctccggcccc ccctgggtgc acagaggcta ctattactgg cctggaaccc 180
ggaaccgaat atacaattta tgtcattgcc ctgaagaata atcagaagag cgagcccctg 240
attggaagga aaaagacaga cgaacttccc caactggtaa cccttccaca cccaattctt 300
catggaccag agatcttqga tgttccttcc acagttcaaa aqaccctttt cgtcaccacc 360

```

```

cctgggtatg acactggaaa tggatttcag ctctctggca cttctgggca gcaacccagt 420
gttggggcaac aaatgatctt tgangaacnt gqntttaggc ggaccacacc ggccacaacg 480
ggcaccacca taaggcatag gccaaagaaca tacccgncga ntgtaggaca agaagctctn 540
tctcnnanaa ncatctcarg gggcccttc cangacaact ctgagtacat canttcatgg 600
catcctgggtg gcactgataa aaacccttac agtta 635

```

```

<210> 174
<211> 572
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(572)
<223> n = A,T,C or G

```

```

<400> 174
agcgtgggtcg cggggcgaggt cctgtcagag tggcactggg tgaagttcca qgaacctga 60
actotaagggt ttcttcatca gtgccaacag gatgacatga aatgatgtac tcagaagtgt 120
nctggaatgg ggcccatgag atgggtgtct qagagagagc ttcttggcct acattcggcg 180
ggatatgtct tggcctatgc ctctatggggg tggccgttql yggcgggtgtg gtccgcctaa 240
aaccatgttc ctcaaagatc atttcttgc caacactggg ctgctgacca gaagtgccag 300
gaagctgaat accatttcca gtgtcatacc cagggtgggt gacgaaaagg qtcttttqaa 360
ctgtggaagg aacatccaag atctctggtc catqaagatt ggggtgtgga agggttacca 420
gttggggaaq ctcctctgtc ttcttccttc caatcanggg ctccgtcttc tgattattct 480
tcagggcaat gacataaatt gtatatctcg ntcccgggtn cagccaataa taataacct 540
ctgtgacacc anggcggggc cgaagganca ct 572

```

```

<210> 175
<211> 372
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(372)
<223> n = A,T,C or G

```

```

<400> 175
agcgtgggtcg cgggcgaggt ctccaccaga ggtaccacct acaacatcat agtggaggca 60
ctgaaagacc agcagaggca taaggttcgg gaagaggttg ttaccgtggg caactctgtc 120
aacgaaggct tgaaccaacc tacggatgac tctgtctttg acccctacac agtttcccat 180
tatgccgttg gagatgagtg ggaacgaatg tctgaatcag gctttaaact gttgtgccag 240
tgcttangct ttggaagtgg tcatttcaga tgtattcat ctgatgggtg ccattgacaat 300
ggtgtgaact acaagatttg agagaagtgg gaccgtcayy gagaaaatgg acctgcccgg 360
gcggccgctc ga 372

```

```

<210> 176
<211> 372
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(372)

```

<223> n = A,T,C or G

<400> 176

tcgagcggcc	gcccgggcag	gtccatttcc	tccctgacgg	tcccacttct	ctccaatctt	60
gtagttcaca	ccattgtcat	ggcaccatct	agatgaatca	catctgaaat	qaccacttcc	120
aaagcctaag	cactggcaca	acagtlilaa	gncrgattca	gacattcggt	cccactcacc	180
tccaacggca	taatgggaaa	ctgtgtaggg	gtcaaaacac	gagtcacccg	taggttgggt	240
caagccctcg	ntgacagagt	tgcctccggt	aacaacctct	tcccgaacct	latgctctcg	300
ctggtcttcc	agtgcctcca	ctatgatgtt	gtaggtggta	cctctggtga	ggacctcggc	360
cgcgaccacg	ct					372

<210> 177

<211> 269

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(269)

<223> n = A,T,C or G

<400> 177

agcgtggccg	cggccgaggt	ccattggctg	gaacqgcacc	aacttgggaag	ccagtgatcg	60
tctcagcctt	ggttctccag	ctaattggta	tggnggtctc	agtagcatct	gtcacacgag	120
cccttcttgg	tgggctgaca	ttctccagag	tggtagacaac	accctgagct	ggtctgcttg	180
tcaaaagtgc	cttaagagca	tagacactca	tttcalattt	ggcgnccacc	ataagtcctg	240
atacaaccac	ggaatqacct	gtcaqqaac				269

<210> 178

<211> 529

<212> DNA

<213> Homo sapien

<400> 178

tcgagcggcc	gcccgggcag	gtccctcacc	cgggttctga	gtacacagtc	agtgtggttg	60
ccttgaccca	tgatatggag	agccagcccc	taatllyaac	ccagtcacaa	getattccctg	120
caccaactga	cctgaagtcc	actcagggtca	cacccacaaag	cctgagcggcc	cagtggacac	180
cacccaatct	tcagctcact	ggatatacag	tgcgggtgac	ccccaaqqaq	aagaccggac	240
caatgaaaqa	aatcaacctt	gctcctgaca	gctcaccctg	ggttgtatca	ggacttatgg	300
cggccaccba	atatgaagtg	agtgtctatg	clcttaagga	cactttgaca	agcagaccag	360
ctcaggggtg	tgtcaccact	ctggagaatg	tcagccccc	aaqaaggggt	cgtgtgacag	420
atgctactga	gaccaccacc	accattagct	ggagaaccaa	gactgagacg	atcactgggt	480
tccaagttga	tgcctgtcca	gccaatggac	ctcgcccgcg	accacgctt		529

<210> 179

<211> 454

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(454)

<223> n = A,T,C or G

<400> 179

```

aacgtggtcg cggccgaggt ctggccgaac tgcagtgta caggggaagat gtacatgtta      60
tagntcttct cgaagtcccg ggcagcagc tccacgggt ggtctctgc ctccaggcgc      120
ttctcattct catggatctt ctccaccgc agcttctgct tctcagtcag aaggttggtg      180
tctcatccc tctcatacag ggtgaccag acgttctga gccagtccc catgcgcagg      240
gggaattcgg tcagctcaga gtccaggcaa ggggggatgt atttgcaagg ccgatgtag      300
tccaagtgga gcttglygc ctctctggtg cctccaagg tgcactttgt ggcaaagaag      360
tggcaggaag agtcgaaggt ctgtttgtca ttgtgcaca ccttctcaaa ctgcacaatg      420
ggggtggtgc agacctgcc gggcgccgc tcga      454

```

```

<210> 180
<211> 454
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(454)
<223> n = A,T,C or G

```

```

<400> 180
tcgagcggcc gcccgggcag gtctgccag ccccatagg cgagtttgag aagngtgca      60
gcaatgacaa caagaccctc gactcttct gccacttct tgcacaaag tgcaccctgg      120
agggcaccac gaagggccac aagctccacc tggactacat cgggccttgc aaatacatcc      180
cccttgctt ggactctgag ctgaccgaat tcccctgct catgcgggac tggctcaaga      240
acgtcctgtt caccctgtat gagagggatg aggacaacaa cctctgact gagaagcana      300
agctcggggt gaagaanac catgagaatg anaagcgct gnaggcanga gaccaccccg      360
tggagctgct gggccgggac ttcgagaaga actataacat gtacatcttc cctgtacact      420
ggcagltcgg ccagacctcg gccgcacca cgct      454

```

```

<210> 181
<211> 102
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(102)
<223> n = A,T,C or G

```

```

<400> 181
agcgtggntg cggacgacgc ccacaaagcc attgtalqla gttttanttc agctgcaaan      60
aataccncca gcatccacct tactaaccag catatgcaga ca      102

```

```

<210> 182
<211> 337
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(337)
<223> n = A,T,C or G

```

```

<400> 182
tcgagcggtc gcccgggcag gtctgggagg atagcaccgg gcatattttg gaatggatga      60

```

```
ggctctggcac cctgagcaac ccaqcgagaa ctgggtctta gttgagcaat ttggctagga 120
ggatagtatg cagcacggtt ctgagtttgt gggatagctg ccctgaagaa acctgaagga 180
ggcgctggct ggtangggtt gattacaggg ctgggaacag ctggtacact tggcattctc 240
tgcatalact ggtagtgag gcgagcctgg cgcctctctt tgcgctgagc taaagctaca 300
tacaatggct ttgnggacct cggccgcgac cagcctr 337
```

<210> 183
<211> 374
<212> DNA
<213> Homo sapien

```
<400> 183
tcgagcggcc gccggggcag gtccatttcc tccctgacgg tcccacttct ctccaattct 60
gtagttcaca ccattgtcat gacaccatct agatgaalca catctgaaat gaccacttcc 120
aaagcctaag cactggcaca acaglttata gctgattca gacattcgtt cccactcacc 180
tccaacggca taatgggaaa ctgtgtaggg gtc aaagcac ggtcatccg taggttggtt 240
caagccttcg ttgacagaag ttgccacgg taacaacctc tccccgaacc ttatgcctct 300
gctggtcttt caagtgcttc cactatgatg ttgtagggtg cacctctggt gaggacctcc 360
gccgcgacca cgtt 374
```

<210> 184
<211> 375
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(375)
<223> n = A,T,C or G

```
<400> 184
agcgtgggtt gcggcgagg tccctaccan aggtgcaccc tacaacatca taqtgagggc 60
actgaaagac cagcagaggg ataaaggttcg ggaagaggtt gttaccgtgg gcaactctgt 120
caacgaagcc ttgaaccaac ctacgcatga ctggtgcttt gacccctaca cagnttccca 180
ttatgcccgt ggagatgagt ggggaacgaat gtcrgaalca gucttiaaac tgttgtgcc 240
gtgcttancg ttggaagtg gtcatttcag atgtgattca tctanattgt gtcattgacaa 300
tggtqngaac tacaagattg gagagaagtg gnaccgtcag gggananaat ggaccrpgcc 360
gggcggcncg ctcca 375
```

<210> 185
<211> 148
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(148)
<223> n = A,T,C or G

```
<400> 185
agcgtgggtc cggccgaggt ctggcttctc gctcanqtga ttatcccgaa ccctccgggc 60
caaataagcg ccggctatgc cctgnattg gattgcaca cggctcacat tgcattgcaa 120
ttgctgagc tgaaggaaaa gattgac 148
```

<210> 186

<211> 397
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(397)
 <223> n = A,T,C or G

<400> 186
 tcgagcggcc gcccgggcag gtccaattga aacaaacagt tctgagaccg ttcttcacc 60
 actgattaag agtgggngg cgggtattag ggataatatt catttaqcct tctgagcttt 120
 ctgggcagac ttggtgacct tgccagctcc agcagccttc tgggccactg ctttgatgac 180
 acccaccgca actgtctgtc tcatacaccg aacagcaaag cgacccaaag gtggatagtc 240
 tgagaagctc tcaacacaca tgggcttgcc aggaaccata tcaacaatgg gcagcatcac 300
 cagacttcaa gaatttaagg gccatcttcc agctttttac cagaacggcg atcaatcttt 360
 tccttcagct cagcaaactt gcatgcaatg tgayccg 397

<210> 187
 <211> 584
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(584)
 <223> n = A,T,C or G

<400> 187
 tcgagcggcc gcccgggcag gtccagaggg ctgtgctgaa gtttgctgct gccactggag 60
 ccactccaat tgctggccgc ttcaactcctg gaaccttcac taaccagatc caggcagcct 120
 tccggcagcc acggccttct gtggtactg acccagggc tgaccaccag cctctcagg 180
 aggcattcta tgttaacctt cctaccattg cgtgtgtgaa cacagattct cctctgcct 240
 atgtgacat tgcacacca tgcacaaca agggagctca ctacnngggg rttgagrtgg 300
 tggatcctgg ctccggaaqt tctgcgcatg ctggccacca ttcccggtga acaccctgg 360
 qangncatgc ctgatctgga cttctacaga gatcctgaag aqaltgaaaa agaagacaa 420
 gctgnttgct ganaaaagaa gtgaccaagg angaaatct angggtgaaa nggactctc 480
 ccgctcctga attcaactgt actcaacctg angntgcaga ctggtcttga aggnagnacan 540
 gggccctctg ggcctatlla agcancttcg gtcggaaca cgnt 584

<210> 188
 <211> 579
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(579)
 <223> n = A,T,C or G

<400> 188
 agcgtgngtc gcggccgag tgcagaalag gcacagaggg caccgtgaca ccttcagacc 60
 agtctgcaac ctccagctga gtagcagtga actcaggagc gggagcagtc cattcacct 120
 gaaattctc cttggnact gccctctcag cagcagcctg ctcttctttt tcaatctctt 180
 caggatctct gtagaagtac agatcaggca tgacctcca tgggtgttca cgggaatgg 240

```

tgcacgcat ggcgagaact tcccgagcca gcacacacca catcaaaccc actgaqtgaq      300
ctcccttgtt gttgcatggg atgggcaatg tccacatagc gcagaggaga atctgtgta      360
cacagcgcaa tggtaggtag gttaacataa gatgcctccg cgagaagctg gtggtcagcc      420
ctggggtcaa gtaaccacaa gaagcagtggt ctcgcggaay gctgcctgga tctggttagt      480
gaaggntcca ggagtgaagc ggccaacaat tggagtgggt ttagtggcaa gcaqcaaat      540
tcagcacaag cctcttgac atgcgcggcg gccgctcga      579

```

```

<210> 189
<211> 374
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(374)
<223> n = A,T,C or G

```

```

<400> 189
tcgaagcgcc gcccgggcag gtcatttttc tccctgacgg nccactttct ctccaatctt      60
gtagttcaca ccattgtcat ggcacatct agatgaatca catctgaaat gaccacttcc      120
aaagcctaaq cactggcaca acagttttaa gcttgattca gacattcgtt cccactcacc      180
tccaacggca taatgggaaa ctgtgtlagg gtcaaagcac gactcaccgc taggttgggt      240
caagccttcg ttgacagagt tgcacacggt aacaaacctc tcccgaaacc ttatgcctct      300
gctgggcttt cagngcctcc actatgatgn tctagggggg caccctctggn gangacctcg      360
gccgcgacca cgct      374

```

```

<210> 190
<211> 373
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(373)
<223> n = A,T,C or G

```

```

<400> 190
agcgtggctg cggccgaggt cctcaccaga ggtgccacct acaacatcat agtggaggca      60
ctgaaagacc agcagaggca taaggctcgg gaagagggtt ttaccgtggg caactctgtc      120
aacgaaggct tgaaccaacc tacggatgac tctgtctttg acccctacac agtttcccat      180
tatgccgttg gagatgagtq ggaacgaatg tctgaatcag gctttaaact gttgtgccag      240
tgcttanget ttggaagtgg gtcatttcaq atgtgattca tctagatggt gccatgacaa      300
tggnngnaac tacaagattg gagagaagtq gnaccgncag ggagaaaatg gacctgcccq      360
ggcggcgct cga      373

```

```

<210> 191
<211> 354
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(354)
<223> n = A,T,C or G

```

```

<400> 191
agcgtggtcg cggccgaggt ccacatcggc agggtcggag cccctggccgc catactcgaa      60
ctggaaacca tcgggtcatgc tctccccgaa ccagacatgc ctcttgctcc tgggggtctt      120
gctgatgtac cagttcttcl gggccacact gggtgagtg gggtagacgc aggtctcacc      180
agtctccatg ttgcagaaqa ccttgatggc atccaggntg caaccttggt tgggggtcaat      240
ccagtactct ccactcttcc aqccagagtg gcacatcttg aggtcacggc aggtgcggnc      300
gggggntttt ggggtcgccc tctggncctc ggntgtntct natctgctgg ctca          354

<210> 192
<211> 587
<212> DNA
<213> Homo sapien

<220>
<221> misc feature
<222> (1)...(587)
<223> n = A,T,C or G

<400> 192
tcgagcggcc gcccgggcag gtctcgcggt cgcactggcg atgctggctc tgttggctcc      60
cccggccctc ctggaccctc tggcccccct qgtccctcca gcctcglll cgaacttcagc      120
ttcttgcccc agccacctca agagaaggct cagcatggcg gccgctacta cggggtggt      180
gatgccaatg tggttcgtga cgtgacctc gaggtggaca ccacctcaa gaacctqagc      240
cagcagatcg agaacatccg gagccnagay ggcagncgca aqaacccgc ccgcacctgc      300
cgtgacctca agatgtgcc aactgactgg aagagtggag agtactggat tgaccccaac      360
caagctgcaa cctggatgcc atcaaagtct tctgcaacat ggagactggg gaqacctgcg      420
tgtacccac tcagcccagt gtggcccaaa agactggta catcagcaag aaccccaagg      480
acaagaagca tgtctggttc ggcgagaaca tgaccgatgg attccagttc gagtatggcg      540
ggcagggtc cgaacctgcc gatggggacc ttggcccgca acacgct          587

<210> 193
<211> 98
<212> DNA
<213> Homo sapien

<220>
<221> misc feature
<222> (1)...(98)
<223> n = A,T,C or G

<400> 193
agcgtgggng cggccgaggt ataaatatcc agnccatctc ctccctccac acgctganay      60
atgaagctgt ncaaagatct cagggtggan aaaacat          98

<210> 194
<211> 240
<212> DNA
<213> Homo sapien

<400> 194
tcgagcggcc gcccgggcag gtccctcaga cttggactgl gtcacactgc caggcttcca      60
gggtcccaac ttgcagacgg cctgttggtg gacagtctct gtaatcgca aagcaaccat      120
ggaagacctg ggggaaaaca ccattggttt atccacctg agatcttga acaacttcat      180
ctctcagcgt gcggaggng gctctggact qgatatttct acctcgcccg cgaccacgc      240

```

<210> 195
 <211> 400
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(400)
 <223> n = A,T,C or G

<400> 195
 cgagcggggc accgggcagg tncagaactcc aatccanana accatcaagc cagatgtcag 60
 aagctacacc atcacagggt tacaaccagg cactgactac aagantacc tgcacacctt 120
 gaatgacaat gctcggagct cccctgtggt catcgacgcc tccactgcca ttgatgcacc 180
 atccaaacctg cgtttcctgg ccaccacacc caattccctg ctgggtatcat ggcagccgcc 240
 acgtgccagg attaccggta catcatnag tatganaagc ctgggcctcc tcccagagaa 300
 gnggtccctc ggccccgcc tgntgtccca naqgnlacta ttactgngcc ngcaaccggc 360
 aaccgatata nattttgnca ttggccttca acaataatta 400

<210> 196
 <211> 494
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(494)
 <223> n = A,T,C or G

<400> 196
 agcgtggttc gcggcccgang tccctgtcaga gtggcactgg tagaagtcc aggaaccctg 60
 aactgtgaagg gttcttcac aqngccaaca ggatgacatg aatgatgta ctcagaagtg 120
 tccctggaatg gggcccatga gatggttctc tgagagagag cttcttgncc tctcttttc 180
 ctcccaatca ggggtctcgt cttctgatta ttcttcaggg caatgacata aattgtatat 240
 tcgggtcccg gntccaggcc agtaaatagta nccctctgtga caccagggcg gngccgagg 300
 accacttctc tgggaggaga cccaqgcttc tcatacttga tgatylaacc ggtaatcctg 360
 gcacgtggcg gctgccatga taccagcaag qaattggggg gtgggtggcca ggaaacgcag 420
 gttggatggn gcatcaatgg cagtggaggc cgtcgatgac caccagggga gctccgcat 480
 tgtcattcaa ggctg 494

<210> 197
 <211> 118
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(118)
 <223> n = A,T,C or G

<400> 197
 agcgtggncg cggccgaggt gcagcgcggg ctgtgccacc ttctgctctc tgcccaacga 60
 taaggagggt nccctgcccc aggaqaacat taactntccc cagctcggcc tctgccgg 118

<210> 198

```
<211> 403
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(403)
<223> n = A,T,C or G

<400> 198
tcgagcggcc gcccgggcag gtttttttltg ctgaaaagtgg ntacttttatt ggntgggaaa      60
gggagaagct gtggtcagcc caagagggaa lacagagncc cgaaaaaggg gagggcaggt      120
gggctggaac caqacgcagg gccaggcaga aactttctct cctcaactgct cagcctgggtg      180
gtggctggag ctcanaaatt gggagtgaca caggacacct tcccacagcc attgcqgcgg      240
catttcacct ggccaggaca ctggctgtcc acctggcact ggccccgaca gaagccccgag      300
ctggggaaaag ttaatgttca cctgggggca ggaacctccc ttatcattgn gcagagagca      360
gaaggtggca caqcccgccg tgcacctcgg ccgcqaccac gct                                403

<210> 199
<211> 167
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(167)
<223> n = A,T,C or G

<400> 199
tcgagcggcc gcccgggcag gtccaccata agtcctgata caaccacgga tgagctgtca      60
ggagcaagggt tgatttcttt cattggctcg gntttctect tgggggncac ccgcactcga      120
tatccagtga gctgaacatt gggtagcgtc cactgggcgc tcaggct                                167

<210> 200
<211> 252
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(252)
<223> n = A,T,C or G

<400> 200
tcgagcgggt cgcccgggca ggtccaccac acccaattcc ttgcttggtat catggcagcu      60
gccacgtgcc aggattaccg gctacatcat caagtatgag aagcctgggt ctctcccag      120
agaagcggtc cctcggtccc gccctgggtgt cacagagget actattactg gcttggaaacc      180
gggaaccgaa tatacaattt atgtcattqn cctgaagaat aatcannaan agcgancccc      240
tgattggaag ga                                252

<210> 201
<211> 91
<212> DNA
<213> Homo sapien
```

```

<400> 201
agcgtggtcg cggccgaggt tgtacaagct tttttttttt tttttttttt tttttttttt    60
tttttttttt tttttttttt tttttttttt t          91

<210> 202
<211> 368
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(368)
<223> n - A,T,C or G

<400> 202
tcgagcggnc gcccgggcag gtctgccaac accaagattg gcccccgccg catccacaca    60
gtccgtgtgc ggggaggtaa caagaaatac cgtgccctga qgttgacgt ggggaatttc    120
tccctggggct cagagtgttg tactcgtaaa acaaggatca tcgatgttqt ctacaatgca    180
tctaataacg agctggttcg taccaagacc ctggtgaaga attgcacgt getcatcgac    240
agcacaccgt accgacagtg gtacgagtc cactatgggc tggccctggg ccgcaagaag    300
ggagccaaqc tgactccctga ggaagaaagc attttaaaac aaaaacgata taanuaaaaa    360
aaaacaat                                     368

<210> 203
<211> 340
<212> DNA
<213> Homo sapien

<400> 203
agcgtggtcg cggccgaggt gaaatggtat tcagcttctt ggcacitctg gtcagaaacc    60
cagtggttgg caacaaatga tctttgagga acatggtttt aggcggacca caccgcccac    120
aacggccacc ccataaggc atagaccaag accatacccg ccgaatgtag gacangaagc    180
tctctctcag acaaccatct catgggcccc attccaggac acttctgagt acatcatttc    240
atgtcatctt gttggcactg atgaagaacc ctacagtttc aggggttctt gaacttctac    300
cagtgccact ctgacaggac ctgcccgggc ggcgcctcga

<210> 204
<211> 341
<212> DNA
<213> Homo sapien

<400> 204
tcgagcggcc gcccgggcag gtccgtctcag agtggcactg gtagaagttc caggaaccct    60
gaactgtaag ggttcttcat cagtgccaac aggatgacat gaaatgatgt actcagaagt    120
gtcccggaat ggggccccatg agatggttqt ctgagagaga gcttcttgtc ctacattcgg    180
cgggtatggt cttggcctat gccttatggg ggtggccggt gtgggcgggt tggtcgcctc    240
aaaaccatgt tcttcaaaga tcatttggtt cccaacactg ggttgctgac cagaagtgcc    300
aggaagctga ataccatttc acctcgcccg cgaccacgct a                                     341

<210> 205
<211> 770
<212> DNA
<213> Homo sapien

<220>

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<221> misc feature
<222> (1)...(770)
<223> n = A,T,C or G

<400> 205
tcgagcggcc gcccgggcag gctcccttc ttggggccca ggggcagngc atagtgggac 60
tcgtaccact gtccgtacgg tgtgtgtcg atgagcacga tgcaattctt caccagggtc 120
ttggtacgaa ccagctcgtt attagatgca ttgtagacaa catcqtatgat ccttgtttta 180
cgagtacaa acctctgagcc ccagygagaaa ttccccacgt ccaacctcag ggcacgggat 240
ttcttgttac ctccccgcac acggactgtg tggatggggc gggggccaag ctgactcctg 300
aggaagaaga gatttttaac aaaaaacgat ctaaaaaat tcagaaqaaa tatgatgaaa 360
ggaaaaagaa tgccaaaatc agcagttctc tggaggaqca gttccagcag ggcaagcttc 420
ttgcgtgcac cgcttcaagg ccgggacagt gtgaccgagc agatggctat gtgctagagg 480
gcaaaagaat ggagttctat cttaagaaaa tcaggggcca gaatgggtng tcttcaacta 540
atccaaaggc gattttcaga ccagtgcact cagcaaaaac attgatactg ntggccaaat 600
ttattgggtc agggcttgca cantlangann ggctgggtct tggggcttgg attggnacaa 660
gctttggcag ccttttcttt ggttttgcca aaaacctttt qntgaaqang anacctnggg 720
cggacccctt aaccgatcc acncngngng gcgttctang gncecncttg 770

<210> 206
<211> 810
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(810)
<223> n = A,T,C or G

<400> 206
agcgtggtcg cggccgaggt ctgctgcttc agcgaagggt ttctggcata accaatgata 60
aggctgccaa agactgttcc aataccagca ccagaaccag ccactcctac tgttgacgca 120
cctgcaccaa taaatttggc agcagtatca atgtctctgc tgattgcact ggtctgaaac 180
tcccttttga ttagctgaga cacaccattc tgggcccrga ttctctaaq atagaactcc 240
aactctttgc cctctagcac atagccatct qctcggtcac actgtccgg ccttgaagcg 300
atgcacgcaa gaagcttgcc ctgctgggaa tgcctctcca ggagactgct gattttggca 360
ttcttttcc tticacata ttcttctga atttttttag atcgttttli gtttaaaatc 420
tcttcttctt caggagtcag cttggcccc gccgcattca cacagtccgt gtgcggggag 480
gtaacaaqaa ataccgtgcc ctgaggttgg acgtgggyaa ttctctctgg ggctcagagt 540
ggtglaclcg taaaacaagg atcatcgatg gtgntacaa tgcattcaat aacgagctgy 600
gtcggaccca aagaacctgg ngaanaaatg gatcgntca tcgacaggac accgtacccg 660
acaggggnac gantcccaat atgcgcttgc ccttgggccg caanaaagga aaactgccg 720
ggcgcccttc gaaagcccaa tlnlygaaaa aatccatcac actggngggc cngtcgagca 780
tgcatntana ggggccatt cccctnann 810

<210> 207
<211> 257
<212> DNA
<213> Homo sapien

<400> 207
tcgagcggcc gcccgggcag gtcaccaacc aaggetgcaa cctggatgcc atcaaagtct 60
tctgaacat ggagactggg gagacctgcg tgaacccac tcagccagat gtggcccaqa 120
agaactgqta catcagcaag aaccccaagg acaagagqca tgtctggttc ggcgagagca 180
tgaccgatgg attccagttc gagtatggcg gccagggctc cgacctgcc gatgtqgacc 240

tcggccgcga ccacgct

257

<210> 208

<211> 257

<212> DNA

<213> Homo sapien

<400> 208

agcgtggtcg	cgcccgaggt	ccacatcggc	agggtcggaq	ccctggccgc	catactcgaa	60
ctggaatcca	tcggtcatgc	tctcgccgaa	ccagacatgc	ctcttgctct	tggtgtctct	120
gctgatctac	cagttcttct	ggccacact	ggctgagtg	gggtacacgc	aggtctcacc	180
agtctccatg	ttgcagaaga	cttggatggc	atccagqttg	cagccttqgt	tggtgacctg	240
cccgggcggc	cgctcgaa					257

<210> 209

<211> 747

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(747)

<223> n = A,T,C or G

<400> 209

tcgagcggcc	gcccgggcag	gtccaccaca	cccaattcct	tgctgggtatc	atggcagccg	60
ccacgtqcca	ggattaccgg	ctacatcctc	aagtatgaga	aqccggggtc	tcctcccaga	120
gaagtgggtc	ctcgcccccg	ccctgggtgc	acagaggcta	ctattactgg	ctgqaaccg	180
ggaaccgaat	atacaattta	tgtcattgcc	ctgaagaata	atcagaagag	cgagccccctg	240
attggaagga	aaaagacaga	cgagcttccc	caactggtaa	cccttcacaa	ccccaatctt	300
catggaccag	agatcttggg	tgttctctcc	acagttcaaa	agaccccttt	cgtcacccac	360
ccctgggtatg	acaactggaaa	tgttatccag	cttctctggca	cttctgggtca	gcaaccacgt	420
gttgggcaac	aaatgatctc	tgagggaacat	ggnttttaggc	ggaccacacc	gcccacaacg	480
gcccacccca	taaggcatal	gccaagacca	taccggccga	a*gtaggaca	agaaqctntn	540
cttcacacac	catntnatgg	gcccattccc	aggacacttc	tgagtacatc	atttatgnca	600
tctgtggcac	ttgatgacaa	cccttacagt	tonggggtct	ggaacttita	ccaggccctnc	660
tacaggaactn	ggccggacnc	cttaagccna	ttncaccerng	gggcqttcta	nggtccact	720
cgnnccactgg	ngaaaatggc	tactgtc				747

<210> 210

<211> 872

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(872)

<223> n = A,T,C or G

<400> 210

agcgtggtcg	cgcccgaggt	ccactagagg	tctgtgtgcc	attgcccagg	cagagtctct	60
gcgttacaaa	ctcctaggag	ggcttgctgt	gaggagggcc	tgctatggtg	tgctgcggtt	120
catcatggag	agtggggcca	aaggctcgca	ggttggtggtg	tctgngaacc	tcnaggaca	180
ngagggctaa	attccatqaa	gtttgtggat	ggcctgatga	tcacacaatcg	gagaccctgt	240
taactactac	cgctcnaccn	cttctgtgnc	cccccccttt	ctgctnaana	catnqqgntn	300


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ntncttgnc  ntccctgggt  ngaanattna  arngectncc  cnttctanc  nctactngnt  360
ccananttg  ccttttaana  atcnccttg  ccttnnncc  tgttcannn  tttnttcgt  420
aacctatna  ntttnattan  atntnnnnn  nctcacccc  ctctcattn  anccnatag  480
ctnnnaant  cttnannct  ccncncnt  ncnctctac  tnantcttc  tnnccuatta  540
cnnagctct  lcnittlaa  taatgnngc  nngctctca  tntctacna  ntgnnaatr  600
cccccccc  cnancgnnt  ttgacctnn  naacctctt  tctctctcc  tncnnaaatt  660
ncnnantcc  ncntccnnc  ntctcggn  ntcccatct  ttccannct  tcantctanc  720
nncctncaa  ttattttct  ntcctcctt  nttctttca  nccccctnn  tctactcnc  780
ntttncatta  natttgaaac  tncacnct  anttctct  ctctacnnt  ttattttncg  840
ntcctctac  ntaatanttt  aatnanttt  cn
ntcctctac  ntaatanttt  aatnanttt  cn  872

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<210> 211
<211> 517
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(517)
<223> n = A,T,C or G

```

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<400> 211
tcgagcgcc  gcccgggcag  gcttgccaag  gagacctgt  tatgctgtg  ggactggctg  60
gggatggca  ggcggtctg  gcttccacc  ctctgttct  gagatgggg  tggggggcag  120
tatctcatc  ttgggttcca  caatgctca  gtggtcagg  aggggtctt  tagggccaat  180
cttaccagt  ggggtcccag  gcagcatgat  ctccacctg  atgcccagc  cacctgtct  240
gagcaacac  tggcgacaaa  gcagtgtcaa  cgtagtaagt  taacagggtc  tccgctgtg  300
atcatcagg  catccacaaa  ctctatgat  ttatgctct  gtctcggag  tttcccaac  360
accacaact  cgcagcttt  ggcaccttc  tccatgatga  accgcagcac  accatagcag  420
gcctccgca  caagcaagc  ctccaaaga  lttgtaacgc  ananactct  ctggcaatgg  480
cacacaaac  tctagtggac  ctggncgcg  accacgc
cacacaaac  tctagtggac  ctggncgcg  accacgc  517

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<210> 212
<211> 695
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(695)
<223> n = A,T,C or G

```

```

<400> 212
tcgagcgcc  gcccgggcag  gtctgggtcc  ggatagcctg  cgagtctct  tactgctact  60
ccagacttga  catcatatga  atcatactgg  ggagaalagt  tctgaggacc  agtagggcat  120
gattcacaga  ttccaggggg  gccaggagaa  ccaggggacc  ctggtgttc  tggaaacca  180
gggtccacc  ttctcccagg  aataccagga  gggcctggat  ctcccttgg  gctttqaqt  240
ccttgaccat  taggaggcag  agtaggagca  gttggaggct  gtgggcaaac  tgcacaacat  300
tctccaaatg  gaatttctg  gttggggcag  tctaattctt  gatccgtcac  atattatgtc  360
atcgacagga  acggatctct  agtcacagac  acatatttgg  catggttct  gcttccagac  420
atctctatcc  gncataggac  tgaccaagat  gggaacatcc  tcttcaaca  agcttntctg  480
tgtgccaaaa  ataatagtgg  gatgaagcag  accgagaagt  anccagctcc  cctttttgca  540
caaagctca  tcatgtctaa  atatcagaca  tgagacttct  ttgggcaaaa  aaggagaaaa  600
agaaaaagca  gttcaaaag  nccnccatca  agtlggttc  tlgccnttc  agcacccggg  660
ccccgttata  aaacacctng  ggccggaccc  cctt
ccccgttata  aaacacctng  ggccggaccc  cctt  695

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<210> 213
 <211> 804
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc feature
 <222> (1)...(804)
 <223> n = A,T,C or G

<400> 213
 agcgtggctcg cggccgaggt gttttatgac gggcccgggtg ctgaaggga qggaacaact 60
 tgatgggtgct actttgaact gcttttcttt tctccttttt gcacaaagag tctcatgtct 120
 gataatttaga catgatgagc tttgtgcaaa aggggagctg gctacttctc gctctgtctc 180
 atccactat tattttggca caacaggaag ctgttgaagg aggatgttcc catcttgggc 240
 agtcctatgc ggataagat gtcgtgaagc cagaaccatg ccaaatatgt gtctgtgact 300
 caggatccgt tctctgcgat gacataatat gtgacgatca agaattagac tgcctcaact 360
 cagaaattcc atttggagaa tcttgtgcag ttgcccaca gcttccaact gctcctactc 420
 gccctctaa tggccaagga cctcaaggcc ccaagggaqa tccaggccct cctqgtattc 480
 ctgggagaaa tgggtgacct ggtattccag qacaaacagg gtccctgggt tctcctgggc 540
 cccctggaat cngngaatc atgcccact ggtcctcaa cttattctcc anagattca 600
 tatgatgtca agtctgggat agcnagtang ganggactcg caggctattc tggaccanac 660
 ctgcccgggg ygcgttcgaa agcccgaatc tgcannntn cnttcacact ggcggccgtc 720
 gagctgctt aaaaggga ttcncttt agngnggggg antacaatta ctnggcggcg 780
 ttttanancg cgnnctggg aaat 804

<210> 214
 <211> 594
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc feature
 <222> (1)...(594)
 <223> n = A,T,C or G

<400> 214
 agcgtggctcg cggccgaggt ccacatcggc agggctggag ccttgccgc catactcgaa 60
 ctggaatcca tccgtcatgc tctcgccgaa ccagacatgc ctcttgcct tgggttctt 120
 gctgatgac cagttcttct gggccacact gggctgagtg gggacacgc aggtctcacc 180
 agtctccatg ttgcagaaga ctttgatggc atccaggttg cagccttgggt tgggtcatt 240
 ccagtactct ccactcttcc agtcagagtg gcacatcttg aggtcacggc aggtgcgggc 300
 ggggttcttg cggctgccct ctgggctccg gatgttctcg atctgctggc tcaggctctt 360
 gaggtggtg tccacctcga ggtcacggtc acgaaccaca ttggcatcat caqcccgtta 420
 gtacgggcca ccacgtcga ccttctcttg angtggctgg ggcaggaaact gaagtcgaaa 480
 ccagcgtcg gaggaccagg gggaccaana ggtccaggaa qqqcccggg gggaccaaca 540
 ggaccagcat caccaagtgc gaccgcgag aacctgcccg gccgnccgt cqa 594

<210> 215
 <211> 590
 <212> DNA
 <213> Homo sapien

<220>

<221> misc_feature
 <222> (1)...(590)
 <223> n = A,T,C or G

<400> 215
 tcgagcggnnc gcccgggcag gtctcgcggt cgcactgggt atgctgggtc tgttggtccc 60
 cccggccctc ctggacctcc tgggtccccc ggccctcca gcgctgggtt cgacttcagc 120
 ttcttgcccc agccacctca agagaaggct cactgatggt gccgctacta ccgggctgat 180
 gatgccaatg tggttcgtga ccgtgacctc gaggtggaca ccacctcaa gaggctgagc 240
 cagcagatcg agaacatccg gagcccagag ggcagccgca agaaccocgc ccgcacctgc 300
 cgtgacctca agatgtgcca ctctgactgg aagagtggag agtaactggat tgaccccaac 360
 caaggtgca acctggatgc catcaaagtc ttctgcaaca tggagactgg tgagacctgc 420
 gtgtacccca ctacgcccag tgtggcccag aagaactggt acatcagcaa gaaccucaag 480
 gacaagaggc atgtctggtt cggcgagagc atgaccgatg gattccagtt cgagtatggc 540
 ggccagggct cccacctgc cgtatgtggac ctccggccgc gaccacctt 590

<210> 216
 <211> 801
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(801)
 <223> n = A,T,C or G

<400> 216
 tngagcggcc gcccgggcag gntgnnaacg ctgggtcctgc tgggtcctcct ggcaaggctc 60
 gtgaagatgg tcaccttgga aaaccggac gacctgggtga gagaggagtt gttggaccac 120
 aggggtgctcg tggtttcctt ggaactcccg gacttcctgg ctccaaaggc attaggggac 180
 acaatggtct ggatggattg aagggacagc ccggtgctcc tgggtgtaag ggtgaacctg 240
 gtgcccctgg tgaaatgga actccaggtc aaacaggagc ccgtgggctt cctggtgaga 300
 gaggaccctg ttggtgcccc tggcccanac ctgggcccgc accacgctaa gcccgaaatt 360
 ccagcacact ggnggccgtt actantggt ccgagctcgg taccaaagctt ggcgtaatca 420
 tgggtcatagc tgtttcctgn gtgaaattgt tatccgctca caatttcaca caccatacga 480
 agccggaaaag cataaagtgt aaagccttgg ggtgctaata agtgagctaa ctccuattaa 540
 attgcgttgc gctcactgcc cgcttttcca nnnngggaaac cntggcntng cngctttgcn 600
 ttaantgaaa tccgccnacc cccggggaaa agncggtttg cngtattggg goncttttcc 660
 cctttcctcg gnttaactga nttantgggc ttggncgnt tccgggttng gcganenggt 720
 tcaacntcac nccaaaggng gnaanacggt ttccccanaa tccgggggnt ancccaangn 780
 aaaacatnng ncaanngggc t 801

<210> 217
 <211> 349
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(349)
 <223> n = A,T,C or G

<400> 217
 agcgtggttn gcggccgagg tctgggccag yggcaccac acgtcctctc taccaggaa 60
 gccacgggc tectgtttga cctggagttc cattttcacc aggggcacca ggttcaccct 120

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tcacaccagg agcaccgggc tgcacctca atccatncag accattgtgn cccctaagtc 180
ctttgaagcc aggaagtcca ygagttccag qgaaccacc qagcaccctg tggccaaca 240
actcctctct caccaggtcg tccgggtttt ccagggtgac catcttcacc agccttgcca 300
ggagqaccaq caggaccagc gtraccnaacc tgcctgggcg gccgcctcga 349

```

<210> 218

<211> 372

<212> DNA

<213> Homo sapien

<400> 218

```

tcgagcggcc gcccgggcag gtccatttcc tccctqacgg tcccacttct ccccaatct 60
gtagtccaca ccattgtcat ggcaccatct agatgaatca catctgaaat gaccacttcc 120
aaagccctaa cactggcaca acagtllaaa gcttgattca gacattctgt cccactcatc 180
tccaacggca taatgggaaa ctgtgtaggg glcaaagcac gagtcatccg taggttgggt 240
caagccttcg ttgacagagt tgcctacggg aacaacctct tcccgaaact tatgcctctg 300
ctggtcttcc agtgccctca ctatgatgtt gtagggtgca cctctggtga ggaacctcggc 360
cgcgaccacg ct 372

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<210> 219

<211> 374

<212> DNA

<213> Homo sapien

<400> 219

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agcgtggtcg cggccgaggt cctcaccaga ggtgccacct acaacatcat aqlqgagqca 60
ctgaaaagacc agcagaggca taaggttcgg gaagaqgttg ttaccgtggg caactctgtc 120
aacgaaggct tgaaccaacc tacggatgac tctgtctttg accctacac agtttcccat 180
tatgccgttg gagatgagt ggaacgaatg tctgaatcag gctttaaact gttgtgccag 240
tgccttaggt ttggaagtgg tcatttcaag atgtgattca tctagatggg gccatgacaa 300
tggtgtgaac tacaagattg gagaagaatg ggacgtcag ggagaaaatg gacctgcccg 360
ggccgqccgc tcga 374

```

<210> 220

<211> 828

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(828)

<223> n = A,T,C or G

<400> 220

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tcgagcgnnc gcccgggcag qtcagtagt gccttcggga ctgggllcag ccccagggtc 60
gcggcagttg tcacagcgcc agccccgtg gccccaag catgtgcagg agcaaatggc 120
accgagatat tcttctgcc actgttctcc tacgtggtat gtcttcccat catcgtaaca 180
cgttgctcca tgagggtcac acttgaattc tccctttccg tcccaagac atgtgcagct 240
catttggtcg gctctatagt ttggggaaa ttgtltaaaa ctgtgccact gacctttact 300
tctccttct ctactggagc ttctgtacct tccacttctg ctgttggtta aatggtggat 360
cttctatcaa ttccattgac agtaccact tctcccaaac atccaggga atagtqattt 420
cagagcgatt aggagaacca aattatggg cagaaataag gggcttttcc acaggttttc 480
ctttggagga agatttcagt ggtgacttta aaagaatact caacagtgct ttcaccccc 540
taqcaaaaqa agaaacncta aatgatggaa nqcttctgga gatgccnca tttaayggac 600
nccagaaact tcaccatcta caggacctac ttcagtttac annaagncac atantctgac 660

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tcanaaaagga cccaagtagc nccatggnc acaatttnag cctttccctt ggggaanann 720
ttacntttctt aaanccctngg cennagcccc cttaagncca aattntggaa aanttccttn 780
cnnctggggg gcngttcnac atgcnttttna agggcccaat tnccccnt 828

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<210> 221
<211> 476
<212> DNA
<213> Homo sapien

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```

<400> 221
tcgagcggcc gcccgggcag gtgtcggagt ccagcacggg aggcgtggtc ttgtagttgt 60
tctccggctg cccattgtct tcccactcca cggcgatgtc gctgggatat aagccttga 120
ccaggcagggt caggctgacc tggttcttgg tcatctcttc cgggatggg ggcaggglgt 180
acacctgtgg ttctcggggc tgccctttgg ctttgagagt ggttttctcg atgggggctg 240
ggagggcttt gttggagacc ttgcacttgt actccttgcc attcagccag tccgtgtgca 300
ggacggtgag gacgctgacc acacggtacg tgctgttgta ctgctcctcc cgcggctttg 360
tcttgccatt atgcacctcc acgcccgtcca cgtaccagtt gaactlgacc ttaggggtctt 420
cgtggctcac gtccaccacc acgcatgtaa cctcagacct cggccgcgac cagcct 476

```

```

<210> 222
<211> 477
<212> DNA
<213> Homo sapien

```

```

<400> 222
agcgtggtcg cggccgaggt ctgaggttac atgcgtggtg gllggacgtga gccacgaaga 60
ccctgaggtc aagttcaact ggtacgtgga cggcgtggag gtgcataatg ccaagacaaa 120
gccgcgggag gacgagtaca acagcacgta cgtgtgtgtc agcgtcctca ccgtcctgca 180
ccaggactcg ctgaatggca aggagtacaa gtgcaaggtc tccaacaaaag cctcccagc 240
ccccatcgag aaaaaccatct ccaaagccaa agyycaagcc ccgagaacca caggtgtaca 300
ccctgcccc atcccgggag gagatgacca agaaccaggt cagcctgacc tgcctggtca 360
aaggtctcta tcccagcgac atcgcctgg agtgggagag caatqggcag ccgagaaca 420
actacaagac cagcctctcc gtgctggact ccgacacctg cccgggcggc cgtctga 477

```

```

<210> 223
<211> 361
<212> DNA
<213> Homo sapien

```

```

<400> 223
tcgagcggcc gcccgggcag gttgaatggc tcttcgctga ccaccccggt gctggtggtg 60
ggtacagagc tccgatgggt gaaaccattg acatagagac tgtccctgtc cagggtgtag 120
gggcnacgct cagtgtatgc gtgggtcagc tggctcagct tccagtacag ccgtctctg 180
tccagtccag ggcttttggg gtcaggacga tgggtgcaga cagcatccac tctggtggct 240
gccccatcct tctcaggcct gagcaaggtc agtctgcaac cagagtacag agagctgaca 300
ctggtgttct tgaacaaggg cataagcaga cctgaagga caccctcgcc gcgaccacgc 360
t 361

```

```

<210> 224
<211> 361
<212> DNA
<213> Homo sapien

```

```

<400> 224
agcgtggtcg cggccgaggt gtccttcagg gtctgcttat gcccttggtc aagaacacca 60

```

```

gtgtcagctc tctgtactct ggttgcagac tgacnrtgct caggccctgag aaggatgggg      120
cagccacccg agtggatgct gtctgcaccc atcgtcctga ccccaaaaqc cctggactgg      180
acagagagcg gctgtactgg aagctgagcc agctgaccca cggcatcact gagctggggc      240
cctacacctt ggacagggac agtctctatg tcaatqgttt caccatcggg agctctgtac      300
ccaccaccag caccgggggtg gtcagcgagg agccattcaa cctgcccggg cggccgctcg      360
a

```

```

<210> 225
<211> 766
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(766)
<223> n = A,T,C or G

```

```

<400> 225
agcgtggctg cggccgaggt cctgtcagag tggcactggt agaagttcca qaaacctga      60
actgtaaggg ttcttcacga gtgccaacaq gatcacatga aatgatgtac tcagaaagtgt      120
cctggaatgg ggcccatgag atggttgtct gagagagagc ttcttgcctt acattcggcg      180
ggtatggctt tggcctatgc cttatggggg tggccgttgt gggcggtgtg gtccgcctaa      240
aaccatgttc ctcaaagatc atltqttqcc caacactggg ttgctgacca gaagtgccag      300
qaaagctaat accatttcca gtgtcacacc cagggtgqgt gacqaaaagg gtcttttgaa      360
ctgtggaagg aacatccaag atctctggtc catgaagatt ggggtgtgga aggggtacca      420
gttggggaag ctgctctgtc ttttcccttc caatcagggg ctgcctcttc tgattattct      480
tcagggcaat gacataaatt gtatattcgg tcccggttcc aggccagtta tagtagcctc      540
tgtqacacca gggcggggcc gagggaacct tctnttgaa gagaccagct tctcatactt      600
gatgatgagn ccggtaatcc tggcacgtgg nggttgcatg atnccaccaa ggaaatnggn      660
ggggngggac ctgcccggcg gccgttcnaa agcccaatc caccaccttg gnggcgctac      720
tatggatccc actcngtcca acttggngga atatggcata acttttt

```

```

<210> 226
<211> 364
<212> DNA
<213> Homo sapien

```

```

<400> 226
tcgagcggcc gcccgggcag gtccctgacc ttttcagcaa gtgggaagggt gtaatccgtc      60
tcacacagaca aggccaggac tcttltgtac ccgttlyatg tagaatgggg tactgatgca      120
acagttaggt agccaatctg cagacagaca ctggcaacat tgcggacacc ctccaggyaay      180
cgagaatgca gaggttctct tctgatatca agcacttcag ggtttagat gctgccattg      240
tcgaacacct gctggatgac cagcccaaaq gagaaggggg agatgttgag catgttcagc      300
agcgtggctt cgtcggctcc cactttgtct ccagtcttga tcagacctcg gccgcgacca      360
cgct

```

```

<210> 227
<211> 275
<212> DNA
<213> Homo sapien

```

```

<400> 227
agcgtggctg cggccgaggt ctgtccatca gtccctcagga ctctactccc tcagcagcgt      60
ggtgancgtg cctccagca acctcggcac ccagacctac acctgcaacg tagatcacia      120
gcccaqcaac accaaggtgg acaagagagt tgagcccaaa tcttgtgaca aaactcacac      180

```

atgccacacg tgcacagac ctgaactct ggggggacg tcagtctcc tttcccccg 240
cctccccctt ccaaacctgc ccgggcggc qctcg 275

<210> 228
<211> 275
<212> DNA
<213> Homo sapien

<400> 228
cgagcggccg ccggggcagg tttggaagg gnatgcggg gaagaggaag actgacggtc 60
ccccaggag ttcaggtgct gggcacggg ggcattgtg agttttgca caagatttgg 120
gtcacaactct cttgtccacc ttggtgttg tgggcttgg atctacgtg caggtgtagg 180
tctgggtgac gaagttgctg gagggcacg tcaccacgt gctgaggag tagaglcctg 240
aggactgtag gacagacctc ggcgcgacc acgct 275

<210> 229
<211> 40
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(40)
<223> n = A,T,C or G

<400> 229
ngqnnqgtcc ggnengncag gaccactent cttcgaaata 40

<210> 230
<211> 208
<212> DNA
<213> Homo sapien

<400> 230
agcgtggctg cggccgagg cctcaactgc ctcccgaaa gcaccgatag ctgcgctctg 60
gaagcgcaga tctgttttaa agtcctgagc aattctctgc accagacgct ggaagggaag 120
tttgcgaatc agaaqtccag tggacttctg ataacgtcta atttcacgga gcgccacagt 180
accaggacct gcccgggcgg ccgctcga 208

<210> 231
<211> 208
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(208)
<223> n = A,T,C or G

<400> 231
tcgagcggcc gcccgggcag gtcctggtae tngggcgctc cgtgaaatta gacgttatca 60
gaagtccact gaacttctga ttcgcaaaact tcccttcag cgtctgggtc gaqaaattgc 120
tcaggacttt aaaacagatc tgcgcttcca gagcgcagct atcggtgctt tgcaggaggc 180
aagtgaggac ctcggcgcg accacgct 208

<210> 232
 <211> 332
 <212> DNA
 <213> Homo sapien

<400> 232
 tcgagcggcc gcccgggcag gtccacatcg gcaagggtcgg agccctggcc gccatactcg 60
 aactggaatc catcggtcat gctctcgccg aaccagacat gccctctgtc ctctggggttc 120
 ttgctgatgt accagttctt ctgggccaca ctgggctgag tggggtacac gcaaggtctca 180
 ccagtctcca tgttgcaaaa gaatttgatg qcalccagggt rgcagccttg gttgggggtca 240
 atccagtact ctccactctt ccagtcagag tggcacatct tgaggtcacg gcaaggtgcgg 300
 gcgggggtct tgacctcgcc ccgaccacg ct 332

<210> 233
 <211> 415
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc feature
 <222> (1)...(415)
 <223> n = A,T,C or G

<400> 233
 gtgggnttga acccnttttna nctccgcttg gtaccgagct cggatccact agtaacggcc 60
 gccagtggtg tggaaattcgg cttagcggtg tcgcgccgga ggtaagaac cccgcccga 120
 cctgccgtga cctcaagatg tgcactcttg actggaagag tggagagtac tggattgacc 180
 ccaaccaagg ctgcaacctg gatgccatca aagtctcttg caacatggag actggtgaga 240
 cctgcgtgta cccactcag ccagtggtg ccagaagaa ctgggtacatc agcaagaacc 300
 ccaaggacaa gaggcatqtc tggttcggcg agagcatgac cgatggattc cagttcgagt 360
 atggcgccca gggtcccgac cctgcgcatg tggacctgac cgggcggccg ctgca 415

<210> 234
 <211> 776
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(776)
 <223> n = A,T,C or G

<400> 234
 agcgtggtcg cggccgaggt ctgggatgct cctgctgtca cagtgaagata ttacaggatc 60
 acttacggag aaacaggagg aatatgccct qtccaggagt tcaactgtgc tgggagcaag 120
 tctacagcta ccatcagcgg ccttaaacct ggagttgatt ataccatcac tgtgtatgct 180
 gtcactggcc gtggaagacg ccccgcaaqc agcaagccaa ttccattaa ttaccgaaca 240
 gaaattgaca aacctccca gatgcaagtg accgatqttc aggacaacag cattagtgtc 300
 aagtggctgc ctccaagttc ccctgttact ggttacagag taaccaccac tcccaaaaat 360
 ggaccaggac caacaaaaac taaaactgca ggtccagatc aaacagaaat gactattgaa 420
 ggcttcgacg ccacagtggg gtatgtggtt aagtgtctat gctcagaatc caagcggaga 480
 gaagtcagcc tctggttcag actgnaagta accaaccattg atcgccataa ggactggcat 540
 tcaactgatgn ggatgccgat tccatcaaaa ttgnttggga aaaccacag gggcaagttt 600
 ncangtcnaq gnggacctac tcgaagccctg aggatqgaat ccttgactnt tccttnncc 660
 gatggggaaa aaaaaccttn aaaactgaa ggacctgccc gggcgccgt ncaaaaccca 720

atccaccccc cttgggggng ttctatgggh ccactcgga ccaaaacttg qgtaan 776

<210> 235
 <211> 805
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(805)
 <223> n = A,T,C or G

<400> 235
 tcgagcggcc gcccgggcag gtccttgcag ctctgcagtg tcttcttcac catcaggtgc 60
 agggaaatagc tcacggattc catcctcagg gctcgagtag gtcacctgt accctggaaac 120
 ttgcccctgt gggttttccc aagcaatttt gatggaatcg gcatccacat cagtgaatgc 180
 cagtccttta gggcgatcaa tgttggttac tgcagtctga accagaggct gactctctcc 240
 gcttggaatc tgagcataga cactaaccac atactccact gtgggtgca aqccctcaat 300
 agtcatttc gtttgatctg gacctgcagt tttagtttt gttggctctg gtccattttt 360
 gggagtgggtg gttactctgt aaccagtaac aggggaactt gaaggcagcc acttgacact 420
 aatgctgttg tccgaacat cggtcacttg catctgggat ggtttgtcaa ttctgttccg 480
 gtaattaatg gaaattggct tgcctcttgc ggggttttc tccacggcca gtgacagcat 540
 acacagtgat ggtataatca actccagggt taagccgctg atggtagctg aaactttgct 600
 ccaggcacaa gtgaactcct gacagggtta ttctctnctg ttctccgtaa gtgactctgt 660
 aatatctcac tgggacagca ggagcattc caaaacttcg ggcngaccc cctaagccga 720
 attnigcaat atncatcaca ctggcgggag ctcgancatt cattaaaagg ccaatcnc 780
 cctataggga gtnantaca attng 805

<210> 236
 <211> 262
 <212> DNA
 <213> Homo sapien

<400> 236
 tcgagcggcc gcccgggcag gtcacttttg gtttttqtc atgttcgggt ggtcaaagat 60
 aaaaactaag tttagagat gaatqcaaag gaaaanaata ttttccaaag tccatgtgaa 120
 attgtctccc atttttttg cttttgaggg ggttcagttt ggggtgcttg tctgttccg 180
 ggttgggggg aaagtgtgtt ggggtgggag gagccagggt gggatggagg gagtttacag 240
 gaagcagaca gggccaactg cg 262

<210> 237
 <211> 372
 <212> DNA
 <213> Homo sapien

<400> 237
 agcgtggtcg cggccgaggt cctcaccaga ggtgccacct acaacatcat agtggaggca 60
 ctgaaagacc agcagaggca taaggctcgg gaagaggttg ttaccgtggg caactctgtc 120
 aacgaagqct tgaaccaacc tacggatgac tctgtctttg accctacac agtttccat 180
 tatgccgttg gagatgagtg ggaacgaatg tctgaatcag gctttaaact gttgtgccag 240
 tgcttaggct ttggaagtgg ccatttcaga tgtgattcat ctatgtggtg ccattgacaat 300
 ggtgtgaact acaagattgg agagaaglyg gaccgtcagg gagaaaatgg acctgcccgg 360
 gcggccgctc ga 372

<210> 238

<211> 372
<212> DNA
<213> Homo sapien

<400> 238
tcgagcggcc gcccgggcag gtccatttcc tccctgaggg tcccaactct ctccaaactt 60
gtagttcaca ccattgtcat ggcaccatct agatgaatca catctgaaat gaccacttcc 120
aaagcctaag cactggcaca acagtttaaa gctgattica gacattcgtt cccactcacc 180
tccaacgcga taatgggaaa ctgtgtaggg gtcaaagcac qagtcacccg taggttggtt 240
caagccttcg ttgacagagt tggccacggg aacaacctct tccggaacct tatgcctctg 300
ctggctcttc agtgccctcca ctatgatgtt gtagggtggc cctctggtga ggacctcggc 360
cgcgaccacg ct 372

<210> 239
<211> 720
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(720)
<223> n = A,T,C or G

<400> 239
tcgagcggcc gcccgggcag gtccaccata agtcnrgata caaccacgga tgagctgtca 60
ggagcaaggt tgatttcttt cattggctcc gtcttctcct tgggggacac cgcactcga 120
tatccagtga gctgaacatt ggggtggtgc cactgggcgc tcaggcttgt ggggttgacc 180
tgagtgaact tcaggtcagt tgggtcagga atagtggta ctgcagtctg aaccagaggc 240
tgactctctc cgtttggatt ctgagcatag acactaacca catactccac tgtgggctgc 300
aagccttcaa tagtcatttc tgtttgatct ggacctgcag ttttagtttt tgttggctct 360
gggtccatttt tgggagtggt ggttactctg taaccaqtaa cagggggaact tgaaggcagc 420
cacttgacac taatgctggt gtctgaaca tcggctcactt qcatctggga tggtttgaca 480
atttctgttc ggttaattaat ggaatttggc ttgctgcttg cggggctgtc tccacggcca 540
gtgacagcat acacagngnt ggnatnata actccaagtt taaggccctg atggtaactt 600
taaaacttgc cccagccagn gaacttccgg acagggtatt tcttctggtt tccgaaagn 660
qancttqgaa tnntctcctt qanacagaag gantctccaa aacttgggac ygaacctctt 720

<210> 240
<211> 691
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(691)
<223> n = A,T,C or G

<400> 240
agcgtggctg cggccgaggt cctgtcaqag tggcactggt agaagttcca ggaaccttga 60
actgtaaggg ttcttcatca gtgccaacag gatgacatga aatgatgtac tcagaagtgt 120
cctggaatgg ggcccatgag atgggtgtct gagagagaac ttcttctcct acattcggcg 180
ggtatggctc tggcctatgc cttatggggg tggccgttgt gggcgggtgt gtccgcctaa 240
aaccatgttc ctcaaagatc atttgttggc caacactggg ttgctgacca gaagtgccag 300
gaaactgaat accatttcca gtgtcatacc cagggtgggt gacgaaaagg gtcttttgaa 360
ctgtggaagg aacatccaag atctctggtc catqaagatt qqqqtgtgga agqgttacca 420

```

gttggggaao ctcgtctgtc ttttccctc caatcagggg ctcgtctctc tgattattct 480
tcagggaat gacataaatt gtatatcgg tccccggtc caggccagta atagtagcct 540
cttgtgacas caggcggggc ccanggacca cttctctggg angagaccca gcttctcata 600
cttgatgatg taacccggta atcctgcacg tggcgctgn catgatacca ncaaggaatt 660
gggtgngng gacctgccc ggggcccctn a 691

```

```

<210> 241
<211> 808
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(808)
<223> n = A,T,C or G

```

```

<400> 241
agcgtggtcg cggccgaggt ctgggatgct cctgctgtca cagtggagata ttacaggatc 60
acttacggag aaacaggagg aaatagccct gtccaggagt tcactgtgcc tgggagcaa 120
tctacagcta ccatcagcgg ccttaaacct ggagttgatt ataccatcac tgtgtargct 180
qtcactggcc gtggagacag ccccgcaagc agcaagccaa ttccatttn ttaccgaaca 240
gaaattgaca aaccatccca gatgcaagtg accgatgttc aggacaacag cattagtgtc 300
aagtggctgc cttcaagttc cctgtttact ggttacagag taaccaccac tccccaaat 360
ggaccaggac caacaaaaac taaaactgca ggtccagatc aaacagaaat gactattgaa 420
ggcttgacgc ccacagtggg gtatgtggtt agtgtctatg ctcagaatcc aagcggagag 480
agtcagcctc tgggttcagac tgcagtaacc actattcctg caccacactya cctgaagttc 540
actcaggtca caccacacaag cctgagccgc cagtggacac caccacatgt tcactcactg 600
gatatcgagt gcgggtgacc cccaaggaga agaccggac ccatgaaaga aatcaacctt 660
gctcctgaca gctcatccgn ggggtgtatca ggacttatgg gggactgcc cggcnggccg 720
ntcgaaancg aattntgaaa tttccttcnc actggngngc gnttcgagct tncctntana 780
nggcccaatt cncctntagn gggtcgtn 808

```

```

<210> 242
<211> 26
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(26)
<223> n = A,T,C or G

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```

<400> 242
agcgtggtcg cggccgaggt cnagga 26

```

```

<210> 243
<211> 697
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(697)
<223> n = A,T,C or G

```

<400> 243
 tcgagcggcc gcccgggcag gtccaccaca cccaattcct tgctgggtatc atggcagccg 60
 ccacgtgccca ggattaccgg ctacalcalt aagtatgaga agcctgggtc tcctcccaga 120
 gaagtgggtc ctggccccq cctgggtgtc acagaggcta ctattactgg cctggaaaccg 180
 ggaaccgaat atacaattta tgtcattgcc ctgaagaata atcagaagag cgaagccctg 240
 attggaagga aaaagacaga cgagcttcct caactggtaa ccttccaca cccaatcct 300
 catggaccag agatcttga tgttccttcc acagttcaaa agaccccttt cgtcaccac 360
 cctgggtatg acaactggaaa tggatttcag ctctctggca ctctgtgtca gcaaccacg 420
 gttgggcaac aatgatctt tgaggaaat ggttttaggc ggaccacacc gcccaaacg 480
 ggcacccca taaggnatag gccaaagacca tccccgcgc aatgtaggac aagaagctct 540
 ntctcaacaa ccactctatg gccccattc caggacactt ctgaglacat catttcatgt 600
 catctgtgtg ggcacttqat gaanaacct tacagttcag ggttctctga acttctacca 660
 gngccacttc tgacagganc ttgggcgnga ccacct 697

<210> 244
 <211> 373
 <212> DNA
 <213> Homo sapien

<400> 244
 agcgtgggtc cggccgaggt ccattttctc cctgaagggtc ccacttctct ccaatcttgt 60
 agttcacacc atgtctatgg caccatctag atgaatcaca tctgaaatga ccacttcaa 120
 agcctaagca ctggcacaac agtttaaagc ctgattcaga catctgttcc cactcatctc 180
 caacggcata atgggaaact gtgtaggggt caaagcacga gtcctccgta ggttgggtca 240
 agccttcgtt gacagagttg cccacggtaa caacctctc cgaacctta tgctctgtct 300
 ggtctttcag tgcctccact atgatgttgt aggtggcacc tctgttgagg acctgcccgg 360
 cggcccgct cga 373

<210> 245
 <211> 307
 <212> DNA
 <213> Homo sapien

<400> 245
 agcgtgggtc cggccgaggt gtgccccaga ccaggaattc ggcttcgaag ttggccctgt 60
 ctgcttctct taaactcct ccattcccaac ctgggtccct cccacccaac caacttctcc 120
 cccaaccccg aaacagacaa gcaacccaac ctgaaccccc tcaaaagcca aaaaaatggg 180
 agacaatttc acatggactt tggaaaatat ttcttctctt tgcattcctc tctcaactt 240
 agtttttctc tttagccaac cgaacatgac caaaaaccaa aagtgcactg cccggcgggc 300
 cgtctga 307

<210> 246
 <211> 372
 <212> DNA
 <213> Homo sapien

<400> 246
 tcgagcggcc gcccgggcag gtccctacca gaggtgccac ctacaacatc atagtggagg 60
 cactgaaaga ccagcagagg cataaggttc ggaagagggt tgttaccgtg ggcaactctg 120
 tcaacgaagg cttgaaccaa cctacggatg actcgtgctt tgacccctac acagtctcc 180
 attatgccgt tggagatgag tgggaacgaa tgtctgaatc aggcctttaa ctgttctgcc 240
 agtgcttagg ctttggaagt ggtcatttca gatgtgattc atctagatgg tgccatgaca 300
 atggtgtgaa ctacaagatt ggagagaaat gggaccgtca gggagaaaat ggacctcggc 360
 cgcgaccacg ct 372

<210> 247
 <211> 348
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(348)
 <223> n = A,T,C or G

<400> 247
 tcgagcggcc gcccgggcag gtaccggggt ggtcagcgag gagccattca nantgaactt 60
 caccatcaac aacctgcggt atgaggagaa catgcagcac cctggctcca ggaagttcaa 120
 caccacggag agggctccttc agggcctgct caggteccctg ttcaagaaca ccagtgttgg 180
 cctctgttac tctggctgca gactgacttt gctcagacct gagaaacatg gggcagccac 240
 tggagtggac gccatctgca cctccgcct tgatcccaat ggtactggac tggacanana 300
 gcggctatac ttgggaagctg anccnaacct ttggcgngga cncncctt 348

<210> 248
 <211> 304
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(304)
 <223> n = A,T,C or G

<400> 248
 gaggactggc tcagctccca gtatagccgc tctctgtcca gtccaggacc agtgggatca 60
 aggcggaggg tgcagatggc gtccactcca gtggctgccc catgtttctc aagtctgagc 120
 aaagncagtc tgcagccaga gtacagaggg ccaacactgq tgcctttgaa caggacactg 180
 agcaggccct gaaggacct ctccgtgggt ttgaacttc tggagccagg gtgctgcatg 240
 ttctcctcat accgcaggtt gtlgatggtg aagttcagtg tgaatggctc ctgctgacc 300
 accc 304

<210> 249
 <211> 400
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(400)
 <223> n = A,T,C or G

<400> 249
 agcgtggctg cggccgaggt ccaccacacc caattccttg ctggtatcat ggcagccgcc 60
 acgtgccagg attaccggct acatcatcaa gtatgagaag cctgggtctc ctcccagaga 120
 agtggteccct cggccccgcc ctgggtgcac agaggctact attactggcc tggaaacggg 180
 aaccgaatat acaatttatg tcattgccct gaagaataat caagaagagcg aqccctqat 240
 tggaaagaaa aagacagacg agcttcccca actggtaacc ctccacaccc ccaatcttca 300
 tggaccanan ancttggatn gtcctttcac nggttnaaaa aacccttttc gccccccac 360
 ctctgggatt aaccttggga aanqggatt tnacncttc 400

<210> 250
 <211> 400
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(400)
 <223> n = A,T,C or G

<400> 250
 tcgagcggcc gcccgggcag gtctgtcag agtggcactg gtagaagttc caggaaccct 60
 gaactgtaag ggttcttcat cagtgccaac aggatgacat gaaatgatgt actcagaagt 120
 gtcttggaat ggggcccatg agatggtgt ctgagagaga gcttcttctgac ctacattcgg 180
 cgggtatggt cttggcctat gccttatggg ggtggccggt gtgggcgggt tggcccgct 240
 aaaaccatgt tctctaaaga tcatttgttg cccaacactg gggtgctgac caqaaagtgc 300
 ayyaagctga ataccatttc cagtgtcata cccagggngg gtgaccaaag ggggtccttt 360
 ngacctggng aaaggaacca tccaaaact ctgncccatg 400

<210> 251
 <211> 514
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(514)
 <223> n = A,T,C or G

<400> 251
 agcgtggncg cggccgaggt ctgaggatgt aaactcttcc cagggaagg ctgaagtgt 60
 gaccatggtg ctactgggtc cttctgagtc agatatgta ctgatgngaa ctgaagttagg 120
 tactgtatgt ggtgaagtct ggtgtgccct aaatgctgca tctccagagc cttccatcat 180
 taccgttctt tcttttctta tgggatgaga cactgttgag tattctctaa agtcaccact 240
 gaaatcttcc tccaaaggaa aacctgtgga aaagccctt atttctgccc cataatttg 300
 ttctctaat cttctgaaa tcaactattc cctgggaangt ttgggaaaaa nngggcnacc 360
 tgncaatgga aantggatan aaagatccca ccaattttcc caacnagcag aaagtgggaa 420
 nggtaccqaa aaqctccaaq taanaaaaaq gagggaaagta aagggtcaagt gggcaccagt 480
 ttcaaacaaa actttcccca aactatanaa ccca 514

<210> 252
 <211> 501
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(501)
 <223> n = A,T,C or G

<400> 252
 aagcggccgc ccgggcaggc ncagnagtgc cttcgggact gggntcacc cagggtctgc 60
 ggcagttgtc acagcgcag ccccgctggc ctccaaagca tgtgcaggag caaatggcac 120
 cgagatatcc cttctgccac tgttctccta cgtgggtatgt ctcccatca tcgtaacacg 180
 ttgcctcatg agggtcacac ttgaattctc cttttccggt cccaagacat gtgcagctca 240

```

tttggctggc tctatagttt ggggaaagt tgttgaaact gtgccactga cctttacttc 300
ctccttctct actggagctt tccgtacctt ccacttctgc tgntggnaaa aagggnggaa 360
cntcttatca atttcatcgg acagtancec nctttctncc caaaacatnc aagggaaaaat 420
attgatrnrc agagcggatt aaqgaacaac ccnaattatg gggggccgaa ataaaggggg 480
cttttccaca ggtnttttcc t 501

```

```

<210> 253
<211> 226
<212> DNA
<213> Homo sapien

```

```

<400> 253
tcgagcggcc gcccgggcag qtctgcaggc tattglaagt gttctgagca catatgagal 60
aacctgggcc aagctatgat gtccgatacg ttaggtgtat laaatgcact tttgactgcc 120
atctcagtggt atgacagcct tctcactgac agcagagatc ttctcactg tgccagtggg 180
caggagaaaag agcatgctgc gactggacct cggccgcgac cacgct 226

```

```

<210> 254
<211> 226
<212> DNA
<213> Homo sapien

```

```

<400> 254
agcgtggtcg cggccgaggt ccagtcgcag catgctcttt ctctgccc a ctggcacagt 60
gaggaagatc tctgctgtca gtgagaaggc tgtcatccac tgagatggca gtcaaaagt 120
catttaatac acctaacgta tcgaacatca tagcttggcc caggttatct catatgtgct 180
cagaacactt acaatagcct gcagacctgc ccggcgcgcc qctcga 226

```

```

<210> 255
<211> 427
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(427)
<223> n = A,T,C or G

```

```

<400> 255
cgagcggccg ccggggcagg tccagactcc aatccagaga accaccaagc cagatgtcag 60
aagctacacc atcacagggt tacaaccagg cactgactac aagatctacc tgtacacctt 120
gaatgacaat gctcggagct ccctgtggt catcgacgcc tccactgcca ttgatgcacc 180
atccaacctg cgttttcttg ccacacaccc caattccttg ctggtatcat ggcagccgcc 240
acgtgccagg attaccggct acatcatcaa gtatgagaag cctgggtctc ctcccagaga 300
agtggctccct cggcccccgc ctggtgnac aqaagctact attactggcc tggaaaccggg 360
aaccgaatat acaatttatg tcattgccct gaagaataat canaagagcg agccctgat 420
tggaagg 427

```

```

<210> 256
<211> 535
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature

```

<222> (1)...(535)
<223> n = A,T,C or G

<400> 256
agcgtggtcg cggccgaggt cctgtcagag tggcactggt agaagttcca ggaacctga 60
actgtaaggg ttcttcacga gtgccaacag gatgacatga aatgatgtac tcagaagtgt 120
cctggaatgg ggcccatgag atgggtgtct gagagagagc ttcttgtcct gtctttttcc 180
ttccaatcag gggtcgcctc ttctgattat tcttcagggc aatgacataa attgtatatt 240
cggttcccgg ttccaggcca gtaatagtag cctctgtgac accaggggcg ggccgagggg 300
ccactttctc gggaggagag ccaggcttct catacttgat gatgtanccg gtaatcctgg 360
caccgtggcg gctgccatga taccagcaag gaattgggtg tgggggccc gaaacgcagg 420
ttggatggtg catcaatggc agtggaggcg tcgatnacca caggggagct ccgancattg 480
tcattcaagg tggacaggtg gaattctgta atcagggtgc tggtttgtaa acctg 535

<210> 257
<211> 544
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(544)
<223> n = A,T,C or G

<400> 257
tcgagcgccc gcccgggcag gtttcgtgac cgtgacctcg aggtggacac caccctcaag 60
agcctgagcc agcagatcga gaacatccgg agcccagagg gcagccgcaa gaaccccgcc 120
cgcacctgcc gtgacctcaa gatgtgccac tctgactgga agagtggaga gtactggatt 180
gaacccaacc aaggtctgcaa cctggatgcc atcaaagtct tctgcaacat ggaqactggt 240
gagacctgcg tgtaccccac tcagcccagt gtggcccaga agaactggtg catcagcaag 300
aaccccaagg acaagaagca tgtctggttc ggcgaaagca tgaccgatgg attccagttc 360
gagtatggcg gccagggtc cagacctgcc gatgtggacc tcggccgcga ccacgctaag 420
cccgaaattc agcacactgg cggccgttac tagtgggac cagacttcgg taccagctt 480
ggcgtaatca tgggncatag ctgtttcctg ngtgaaaatg gtattccgct tcacaatttc 540
ccac 544

<210> 258
<211> 418
<212> DNA
<213> Homo sapien

<400> 258
agcgtggtcg cggccgaggt ccacatcggc agggctggag ccctggccgc catactcgaa 60
ctggaatcca tcggtcatgc tctcgccgaa ccagacatgc ctcttgtcct tggggttctt 120
gctgatgtac cagttcttct gggccacact gggctgagtg gggtaacgc aggtctcacc 180
agtctccatg ttgcagaaga ctttgatggc atccaggttg cagccttggg tggggtcaat 240
ccagtactct ccaactcttc agtcagagtg gcacatcttg aggtcacggc aggtgcgggc 300
ggggttcttg cggctgccct ctgggctccg gatgttctcg atctgctggc tcaagctctt 360
gaagggtggt gtccacctcg aggtcacggt caccgaaacct gcccgggcgg ccgctcga 418

<210> 259
<211> 377
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(377)
<223> n = A,T,C or G

<400> 259
agcgtggtcg cggccgaggt caagaacccc gcccgaccc gccgtgacct caagatgtgc 60
cactctgact ggaagagtgg agagtactgg attgacccca accaaggctg caacctggat 120
gccatcaaag tcttctgcaa catggagact ggtgagacct gcgtgtacct cactcagccc 180
agtgtggccc agaagaactg gtacatcagc aagaacccca aggacaagag gcattgtctgg 240
ttcggcgaga gcattgaccga tggattccag ttcgagtatg gcggccaggg ctccgacct 300
gccgagtgtg acctgcccg gccggncgc tcgaaaagcc cnaatttcca gncacacttg 360
gccggccgtt actactg 377

<210> 260
<211> 332
<212> DNA
<213> Homo sapien

<400> 260
tcgagcggcc gcccgggcag gtccacatcg gcagggtcgg agccctggcc gccatactcg 60
aactggaatc catcggtcat gctctcgccg aaccagacat gcctcttgtc cttgggggttc 120
ttgctgatgt accagttctt ctgggcacac ctgggctgag tggggtacac gcaggtctca 180
ccagttctca tgttgcaaaa gactttgatg gcattccagg tgcagccttg gttgggggtca 240
atccagtact ctccactctt ccagtcagag tggcacatct tgaggtcacg gcaggtgcgg 300
gcgggggtct tgacctcggc cgcgaccacg ct 332

<210> 261
<211> 94
<212> DNA
<213> Homo sapien

<400> 261
cgagcggccg cccgggcagg tccccccct ttttttttt ttttttttt ttttttttt 60
tttttttttt ttttttttt ttttttttt tttt 94

<210> 262
<211> 650
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(650)
<223> n = A,T,C or G

<400> 262
agcgtggtcg cggccgaggt ctggcattcc ttcgacttct ctccagccga gcttccaga 60
acatcacata tcaactgcaa aatagcattg catacatgga tcaggccagt ggaaatgtaa 120
agaaggccct gaagctgatg gggtcacatg aaggtgaatt caaggctgaa ggaaatagca 180
aattcaccta cacagttctg gaggatggtt gcacgaaaca cactggggaa tggagcaaaa 240
cagttcttga atatcgaaca cgcaaggctg tgagactacc tattgtatg attgcacct 300
atgacattgg tggctctgat caagaatttg gtgtggacgt tggccctgtt tgctttttat 360
aaaccaaact ctatctgaaa tcccaacaaa aaaaatttaa ctccatattg gntcctcttg 420
ttctaattct ggcaaccagt gcaagtgacc gacaaaattc cagttattta tttccaaaat 480

```
gtttggaac agtataattt gacaaagaaa aaaggatact tctctttttt tggctggtcc 540
accaaataca attcaaaagg ctttttggtt ttattttttt anccaattcc aattttcaaaa 600
tgtctcaatg gngcttataa taaaataaac ttccaccctt nttttntgat 650
```

```
<210> 263
<211> 573
<212> DNA
<213> Homo sapien
```

```
<220>
<221> misc_feature
<222> (1)...(573)
<223> n = A,T,C or G
```

```
<400> 263
agcgtggtcg cggccgaggt ctgggatgct cctgctgtca cagtgaata ttacaggatc 60
acttacggag aaacaggagg aaatagccct gtccaggagt tcaactgtgc tgggagcaag 120
tctacagcta ccacagcgg ccttaaacct ggagttgatt ataccatcac tgtgtatgct 180
gtcaactggcc gtggagacag ccccgcaagc agcaagccaa ttccatttaa ttaccgaaca 240
gaaattgaca aaccatccca gatgcaagt accgatgttc aggacaacag cattagtgtc 300
aagtggctgc cttcaagttc cctgtttact gggtacagaa gtaaccacca ctcccaaaaa 360
tggaccagga ccaacaaaaa ctaaaactgc aggtccagat caaacagaaa atggactatt 420
gaaggcttgc agcccacagt ggaagtatgt ggntaggngt ctatgctcag aatcccaagc 480
cggagaaagt cagccttctg gtttagactg cagtaaccaa cattgatcgc cctaaaggac 540
tggncattca cttggatggt ggaatgtcaa ttc 573
```

```
<210> 264
<211> 550
<212> DNA
<213> Homo sapien
```

```
<220>
<221> misc_feature
<222> (1)...(550)
<223> n = A,T,C or G
```

```
<400> 264
tcgagcggcc gcccgggcag gtccttgca gctctgcagng tcttcttcac catcagggtc 60
aggggaatagc tcatggattc catcctcagg gctcgagtag gtcaccctgt acctggaaac 120
ttgcccctgt gggctttccc aagcaatttt gatggaatcg acatccacat cagnaatgc 180
cagtccttta gggcgatcaa tgttqgttac tgcagtctga accagaggct gactctctcc 240
gcttgattc tgagcataga cactaaccac atactccact gtgggctgca agccttcaat 300
agtcatttct gtttgatctg gacctgcagt ttttaagttt tgggtgtcct gnccatttt 360
tgggaagtgg ggggttactc tgtaaccagt aacaggggaa cttgaaggca gccacttgac 420
actaatgctg ttgtcctgaa catcggtcac ttgcatctgg ggatggtttt gacaatttct 480
ggttcggcaa attaatggaa attggcttgc tgcctggcgg ggctgnctcc acgggccagt 540
gacagcatac 550
```

```
<210> 265
<211> 596
<212> DNA
<213> Homo sapien
```

```
<220>
<221> misc_feature
```

<222> (1)...(596)

<223> n = A,T,C or G

<400> 265

```

tcgagcggcc gcccgggcag gtccctgcag cctcgacgtg tcttcttcac catcagggtgc      60
agggaataag tcatggattc catcctcagg gctcgagtag gtcacctgt acctggaaac      120
ttgccccctgt gggctttccc aagcaathtt gatggaatcg acatccacat cagtgaatgc      180
cagtccttta gggcgatcaa tgttggttac tgcagtcga accagaggct gactctctcc      240
gcttggattc tgagcataga cactaaccac atactccact gtggcgctga agccttcaat      300
agtcattttc gtttgatctg gacctgcagt ttttaagttt tgttggnect gnnccatttt      360
tggggaagggt gtggttactc ttgtaaccag taacaggggg acctgaagca gccacttgac      420
actaatgctg gtggcctgaa catcggtcac ttgcattctg gatgggttgg tcaattttctg      480
ttcggtaat aatgggaaat tggcttactg gcttgcgggg gctgtctcca cggncagtga      540
caagcataca caggngatgg gtataatcaa ctccaggttt aaggccnctg atggtg      596

```

<210> 266

<211> 506

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(506)

<223> n = A,T,C or G

<400> 266

```

agcgtggtcg cggccgaggt ctgggatgct cctgctgtca cagtggagata ttacaggatc      60
acttacaggag aaacaggagg aaatagccct gtccaggagt tcaactgtgc tgggagcaag      120
tctacagcta ccacagcagg ccttaaacct ggagttgatt ataccatcac tgtgtatgct      180
gtcactggcc gtggagacag ccccgcaagc agtaagccaa ttccattaa ttaccgaaca      240
gaaattgaca aaccatccca gatgcaagtg accgatgttc aggacaacag cattagtgtc      300
aagtggctgc cttcaagttc ccctgttact ggttacagag taaccaccac tccccaaaaa      360
gggaccagga ccaacaaaaa actaaaaactc canggtccag atcaaacaga atagactatt      420
gaaggcttgc agccacacgt ggagtatgtg ggttagtgtc tatgtctcaga atnccaagcg      480
gagagagtcg gcctctggtt cagact

```

<210> 267

<211> 548

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(548)

<223> n = A,T,C or G

<400> 267

```

tcgagcggcc gcccgggcag gtcagcgtc tcaggacgtc accaccatgg cctgggctct      60
gctcctctc accctcctca ctcagggcac agggctcctg gccaggtctg ccttgactca      120
gcctcccccc gcgtccgggt ctccctggaca gtcagtcacc atctcctgca ctggaaccag      180
cagtgcagtt ggtgcttatg aatttgtctc ctggtaccaa caacacccag gcaaggcccc      240
caaacctatg attctgagg tcaactaagc gccctcagg gtccctgac gcttctctgg      300
ctccaagtct ggcaacacgg cctccctgac cgtctctggg ctccanctg aggatganc      360
tgattattac tggaagctca tatgcaggca acaacaattg ggtgttcggg ggaagggaac      420
aagctgaccg tncctaagtc aagcccaagg cttgcccccc tcggtcactc tgttccacc      480

```

ctcctctgaa gaagctttca agccaacaan gncacactgg gtgtgtctca taagtggact 540
ttctaccc 548

<210> 268
<211> 584
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(584)
<223> n = A,T,C or G

<400> 268
agcgtggtcg cggccgaggt ctgtagcttc tgtgggaact ccactgctca ggcgtcaggg 60
tcaggtagct gctggccgcg tacttggtgt tgccttgntt ggaggggtgt gtggtctcca 120
ctccgcctt gacggggctg ctatctgctt tccaggccac tgtcacggct cccgggtaga 180
agtcacttat gagacacacc agtgtggcct tgttggcttg aagctcctca gaggaggggtg 240
ggaacagagt gaccgagggg gcagccttgg gctgacctag gacggtcagc ttggtccctc 300
cgccgaacac ccaattgttg ttgcctgcat atgagctgca gtaataatca gcctcatcct 360
cagcctggag cccagagacn gtcaagggag gccctgtgtt gccaaagactt ggaagccaga 420
naagcgatca yggacccctg agggccgctt tacngacctc aaaaaatcat gaatttgggg 480
ggcctttgcc tgggngttgg ttggtnaecn gnaaaacaaa atttcataaa gcaccaacgt 540
cactgctggt ttccagtcca ngaanatggt gaactgaant gtcc 584

<210> 269
<211> 368
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(368)
<223> n = A,T,C or G

<400> 269
agcgtggtcg cggccgaggt ccagcctcag gagccccgcc ttgccggctc tggtcctgcg 60
ctttcttttt gtggcctgaa acgatgtcat caattcgcaq tagcagaact gccgtctcca 120
ctgtgtcttt ataagtctgc agcttcacag ccaatggctc ccatactccc agttccttca 180
tgtccaccaa agtaccgcgt tcaccattta caccacaggt ctacacagttc tectgggtgt 240
gcttggcccg aaggagagta agtanacgga tgggtgctggt cccacagttc tggatcaggg 300
tacgaggaaat gacctctagg gcctgggcna caagccctgt atggacctgc ccggggcggc 360
ccgctcga 368

<210> 270
<211> 368
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(368)
<223> n = A,T,C or G

<400> 270

```

tcgagcgccc gcccgggcag gtccatacag ggcgtgtgcc caggccctag aggnucattcc    60
ttgtaccctg atccagaact gtgggaccag caccatccgt ctacttacct cccttcgggc    120
caagcacacc caggagaact gtgagacctg ggggtgtaaat gngagacgg gtactttggg    180
ggacatgaag gaactgggca tatgggagcc attggctgny aagctgcana cttataagac    240
agcagtgag acggcagttc tgcactgcg aattgatgac atcgtttcag gccacaaaaa    300
gaaaggcgat gaccanagcc ggcaaggcgg ggcctccctga tgctggacct cggcccgccga    360
ccacgctt

```

```

<210> 271
<211> 424
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(424)
<223> n = A,T,C or G

```

```

<400> 271
agcgtggctg cggccgaggt ccactagagg tctgtgtgcc attgccacgg cagagtctct    60
gcgttacaaa ctccctaggag ggccttgcgt gcggagggcc tgcctatggg tgctgcgggt    120
catcatggag agtggggcca aaggctgcga ggttgtgggt tctgggaaac tccgaggaca    180
gagggctaaa tccatqaagt ttctggatgg cctgatgac cacagcggag accctgttaa    240
ctactacgtt gacactgctg tgcgccacgt gttgctcana cagggtgtgc tgggcacaa    300
ggtgaagatc atgctgcctt gggacccanc tggcaaaaat ggcccttaaa aaccccttgc    360
cntgaccacg tgaaccattt gtngaaccc caagatgaan atacttgccc accacccccc    420
attc

```

```

<210> 272
<211> 541
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(541)
<223> n = A,T,C or G

```

```

<400> 272
tcgagcgccc gcccgggcag gtctgccaaag gagaccctgt tatgctgtgg ggactggctg    60
gggcatggca ggccgctctg gcttcccacc ctctgtttct gagatggggg tggtagggcag    120
tatctcatct ttgggttcca caatgctcac gtggtcaggc aggggcttct tagggccaat    180
cttaccagtt gggtoaccag gcagcatgat cttcaccttg atgccagca caccctgtct    240
gagcaacacg tggcgcacag cagtgtcaac gtagtagtta acagggtctc cgtctgtgat    300
catcaggcca tccacaaact tcatggattt agccctctgt cctcggagtt tcccaaaaac    360
ccacaacctc gccagccttt gggcccccact tcttcataaa tgaaccgca gcacaccatt    420
ancaaggccc ttccgcacag gnaagccctt cctaaggagt ttgtgaaacg caaaaaactc    480
ttgcctgggg caaatgggca cacagacctn tantnggacc ttggncgcg aaccaccgct    540
t

```

```

<210> 273
<211> 579
<212> DNA
<213> Homo sapien

```

<220>
<221> misc_feature
<222> (1)...(579)
<223> n = A,T,C or G

<400> 273
agcgtggctg cgcccgaggt ctggccctcc tggcaggct ggtgaagatg gtcacccctg 60
aaaacccgga cgacctgggt agagaggagt tgttggacca caggggtgtc gtggtttccc 120
tggaactcct ggaattcctg gcttcaaagg cattagggga cacaatgggc tggatggatt 180
gaaggacacg ccggtgtgtc ctggtgtgaa ggggtgaact gngccctg gtgaaaatgg 240
aactccaggt caaacaggag ccgngggct tcctgngag agaggacgtg ttggtgcccc 300
tggccanac ctgcccgggc ggcgctcna aaagccgaaa tccagnacac tggcgccgn 360
tactantgga atccgaactt cgtaccana gcttggcgt aatcatggc atagcttgtt 420
ccctgggng gaaattgta ttccgctncc aattccacac aacataccga acccggaag 480
cattaaagtg taaaagcct gggggggcct aaatgangtg agcntaactc ncatttaatt 540
ggcgttgccg ttcactgcc cgttttcca gtccgggna 579

<210> 274
<211> 330
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(330)
<223> n = A,T,C or G

<400> 274
tcgagcggcc gcccgggcag gtctgggcca ggggcaccaa caggtctct ctcaccagga 60
agccacggg ctctgtttg acctggagt ccattttcac caggggcacc aggttcaccc 120
ttcacaccag gagcaccggg ctgtcccttc aatccatcca gaccattgtg nccctaagt 180
cctttgaagc caggaagtcc aggaattcca gggaaaccac gagcaccctg tggccaaca 240
actctctct caccaggtcg tccgggtttt ccagggtgac catcttcacc agccttgcca 300
ggagggccag acctcggccg cgaccacgt

<210> 275
<211> 97
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(97)
<223> n = A,T,C or G

<400> 275
ancgtggctg cgcccgaggt cctcaccaga ggtgncaact acaacatcat agtggaggca 60
ctgaaagacc ancagaggca taaggttcgg gaagagg 97

<210> 276
<211> 610
<212> DNA
<213> Homo sapien

<220>

<221> misc_feature
<222> (1)...(610)
<223> n = A,T,C or G

<400> 276
tcgagcggcc gcccgggcag gtccattttc tccctgaacg tcccacttct ctccaatctt 60
gtagttcaca ccattgtcat ggcaccatct agatgaatca catctgaaat gaccacttcc 120
aaagcctaag cactggcaca acagtttaaa gcttgattca gacattcgtt cccactcacc 180
tccaaacggca taatgggaaa ctgtgtaggg gtcaaagcac gagtcacccg taggttggtt 240
caagccttcg ttgacagagt tgtccacggt aacaacctct tcccgaaact tatgcctctg 300
ctggctcttc agtgcctcca ctatgatgtt gtagggtggc cctctggtga ggacctcngn 360
ccngaacaac gcttaagccc gnattctgca gaataatccc atcacacttg ggggcccgtt 420
cgancatgca tcntaaaaag ggcaccaatt tcccccttat aagngaance gtatttncca 480
atttcaactg ncccgcgnt tttacaaaag nccgtgaact ggggaaaaac cctggcggtt 540
acccaacttt aatcgcentt ggcagcacia tcccccttt tcgnccanen tgggcgtaaa 600
taaccgaaaa 610

<210> 277
<211> 38
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(38)
<223> n = A,T,C or G

<400> 277
anccnggtcg cggccgangt nttttttctt nttttttt 38

<210> 278
<211> 443
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(443)
<223> n = A,T,C or G

<400> 278
agcgtggtcg cggccgaggt ctgaggttac atgcgtggtg ggggacgtga gccacgaaga 60
ccctgaggtc aagttcaact ggtacgtgga cggcgtggag gtgcataatg ccaagacaaa 120
gccgcgggag gagcagtaca acagcacgta ccgggnggtc agcgtcctca ccgtcctgca 180
ccagaattcg ttgaatggca aggaglacaa yngcaaggtt tccaaacaaag ccntcccagc 240
cccctcga aaaccattt ccaaaagccaa agggcaqccc cgagaaccac aggtgtacac 300
cctgccccca tcccgggagg aaaagancaa naaccnggtt cagccttaac ttgcttggtc 360
naangctttt tatcccaacg naattcccc ntggaantgg gaaaaaccaa tgggccaanc 420
cgaaaaacaa ttacaanaac ccc 443

<210> 279
<211> 348
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(348)
<223> n = A,T,C or G

<400> 279
tcgagcggcc gcccgggcag gtgtcggagt ccagcacggg aggcgtggtc ttgtagttgt 60
ttctcgggtg cccattgtct tcccactcca cggcgatgtc gctgggatag aagcctttga 120
ccaggcaggt caggctgacc tggttcttgg tcatctcttc ccgggatggg gccaggggtga 180
acacctgggg ttctcggggc ttgccctttg gttttgaana tgggtttctc gatgggggct 240
ggaagggtt tgttgnaaac ctgcacttg actccttgcc attcaccag ncctggngca 300
ggacggngag gacnctnacc acacqqaacc gggctggtgg actgctcc 348

<210> 280
<211> 149
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(149)
<223> n = A,T,C or G

<400> 280
agcgtggtcg cggacgaggt cctgtcagag tggnaactggt agaagttcca ngaacctga 60
actgtaaggg ttcttcatca gtgccaacag yatgacatga aatgatgtac tcagaagngn 120
cctggaatgg ggcccatgan atggttgcc 149

<210> 281
<211> 404
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(404)
<223> n = A,T,C or G

<400> 281
tcgagcggcc gcccgggcag gtccaccaca cccaattcct tgggtggtatc atggcagccg 60
ccacgtgccg ggattaccgg ctacatcatc aagtatgaga agcctgggtc tcttcccgag 120
gaagtgggtc ctcggtcccg cctgggtgtc acagaggcta ctattactgg cctggaaccg 180
ggaaccgaat atacaattta tgtcattgcc ctgaagaata atcagaagag cgagccctg 240
attggaagga aaaagacaga cgagcttccc caactggtaa cccttccaca ccccaatctt 300
catggaccag agatcttggg tgttccttcc acagttcaaa agaccctttt cggcaccccc 360
cctgggtatg aacctgggaa aanggnantt aanccttcct ggca 404

<210> 282
<211> 507
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(507)

<223> n = A,T,C or G

<400> 282

agcgtggctcg	cgcccgagggt	ctgggatgct	cctgctgtca	cagtgagata	ttacaggatc	60
acttacggag	aaacaggagg	aaatagccct	gtccaggagt	tcactgtgcc	tgggagcaag	120
tctacagcta	ccatcagcgg	ccctaaacct	ggagttgatt	ataccatcac	tgtgtatgct	180
gtcactggcc	gtggagacag	ccccgcaagc	agcaagccaa	tttccattaa	ttaccgaaca	240
gaaattgaca	aaccatccca	gatgcaagt	accgatgttc	aggacaacag	cattagtgtc	300
aagtggctgc	cttcaaggtn	ccctgggtact	gggttacaga	ntaaccacca	ctcccaaaaa	360
tggaccagga	accacaaaaa	cttaaaactgc	aggggtccaga	tcaaaaacaga	aatgactatt	420
gaanqcttgc	agcccacagt	gggagtatgn	gggtagtgn	tatgcttcag	aatccaagcg	480
gaaaaangtc	aagccttntg	ggttcaa				507

<210> 283

<211> 325

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(325)

<223> n = A,T,C or G

<400> 283

tcgagcggcc	gcccgggcag	gtccttgacg	ctctgcagtg	tcttcttcac	catcagggtc	60
agggaaatagc	tcatggattc	catcctcagg	gtctgagtag	gtcaccctgt	acctggaaac	120
ttgcccctgt	gggctttccc	aagcaatttt	gatggaatcg	acatccacat	cagtgaatgc	180
cagtccttta	gggcgatcaa	tgttggttac	tgcagctga	accagaggct	gactctctcc	240
gcttgatgc	tgagcataga	cactaaccac	atactccact	gtgggtgca	anccttcaat	300
aanncatctc	tgtttgatct	ggacc				325

<210> 284

<211> 331

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(331)

<223> n = A,T,C or G

<400> 284

tcgagcggcc	gcccgggcag	gtctgggtgg	gtcctggcac	acgcacatgg	gggngttgnt	60
ctnatccagc	tgcccagccc	ccattggcga	gtttgagaag	gtgtgcagca	atgacaacaa	120
naccttcgac	tcttctctgc	acttctttgc	cacaaagtgc	accttgagg	gcaccaagaa	180
gggccaacaag	ctccacctgg	actacatcgg	gccttgcaaa	tacatccccc	cttgccctgga	240
ctctgagctg	accgaattcc	cccttgccga	tgcgggactg	gtccaagaac	ngtccctggca	300
cccttgatg	anagggatga	agacacnacc	c			331

<210> 285

<211> 509

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature
 <222> (1)...(509)
 <223> n = A,T,C or G

<400> 285
 agcgtggctg cggccgaggt atgtcttaca gtctctcagga ctctactccc tcagcagcgt 60
 ggtgaccgtg cctctccagca acttcggcac ccagacctac acctgcaacg tagatcacia 120
 gccccagcaac accaaggtgg acaagagagt tgagcccaaa tcttgtgaca aaactcacac 180
 atgcccaaccg tgcctcagcac ctgaactcct ggggggaccg tcagtcttcc tcttcccccg 240
 catccccctt ccaaacctgc ccgggcggcc gctcgaaaagc cgaattccag cacactggcg 300
 gccggtacta gtgganccna acttgggnac caacctggng gaantaatg gcataanctg 360
 tttctggggg gaaattggta tccngtttac aattccnca caacatacga gccggaaqca 420
 taaaagnqta aaagcctggg ggnggcctaa tgaagtgaay ctaaaactcac attaatngc 480
 gttgcgcctc actggcccg ctttccagc 509

<210> 286
 <211> 336
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(336)
 <223> n = A,T,C or G

<400> 286
 tcgagcggcc gcccgggcag gtttggaaagg gggatgcggg ggaagaggaa gactgacggg 60
 cccccagga gtccaggtgc tgggcacqgt gggcatgtgt gagttttgtc acaagatttg 120
 ggctcaactc tcttgtccac cttggtgttg ctgggcttgt gatctacgtt gcaggtgtag 180
 gtctggngc cgaagttgct ggagggcacg gtcaccacgc tgcctgaggga gtagagtcct 240
 gaggactgta ngacagacct cggccgngac cacgctaagc cgaattctgc agatatccat 300
 cacactggcg gccgctccga gcatgcattt tagagg 336

<210> 287
 <211> 30
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(30)
 <223> n = A,T,C or G

<400> 287
 agcgtggncg cggacganga caacaccccc 30

<210> 288
 <211> 316
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(316)
 <223> n = A,T,C or G

<400> 288
tcgagcggcc gcccgggcag gncacacatcg gcagggtcgg agccctggcc gccatactcg 60
aactggaatc catcggtcat gctcttgccg aaccagacat gcctcttgc cttgggggttc 120
ttgctgatgn accagttctt ctgggccaca ctgggtcgag tggggtacac gcagggtctca 180
ccagtctcca tgttgcaaaa gactllgatg gcattccaggt tgcagccttg gttgggggtca 240
atccagtact ctccactctt ccagtcagag tggcacatct tgaggtcacg gcagggtcgg 300
gcgggggtct tgacct 316

<210> 289
<211> 308
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(308)
<223> n = A,T,C or G

<400> 289
agcgtggtcg cggccgaggt ccagcctgga gatanzgtg aaqgtggtgc ccccggaatt 60
ccaggratag ctggacctcg tggtagccct ggtgagagag gtgaaactgg cctccagga 120
cctgctggtt tccctggtgc tccctggacag aatggtqaac ctgngggtaa aggagaaaga 180
ggggctccgg ntganaaagg tgaaggaggc cctcctgnat tggcaggggc ccanyactt 240
agaggtggag ctggccccc ttggcccga qgaggaaagg gtgctgctgg tctcctggg 300
ccacctgg 308

<210> 290
<211> 324
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(324)
<223> n = A,T,C or G

<400> 290
tcgagcggcc gcccgggcag gtctgggcca ggaggaccaa taggaccagt aggaccctt 60
gggccatctt tccctgggac accatcagca cctggaccgc ctggttcacc cttgtcacc 120
tttgaccag gacttccaag acctcctctt tctccaggca ttccctgcag accaggagta 180
ccancagcac caggtggccc aggaggacca gcagcaccct ttctccttc gggaccaggg 240
ggaccagctc cactctaaag tcttggggcc cctgccaatc caggaggggc tcttcacct 300
ttctcaccg gagccctct ttct 324

<210> 291
<211> 278
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(278)
<223> n = A,T,C or G

```

<400> 291
tcgagcggcc gcccgggcag gtccaccggy atattcgggg gtctggcagg aatgggaggc      60
atccagaacg agaaggagac catgcaaaagc ctgaacgacc gcctggcctc ttacctggac      120
agagtggagg gcctggagac cgacaaccgg aggctggaga gcaaaaaccc ggagcacttg      180
gagaagaagg gaccccgagt cagagactgg agccattact tcaagatcat cgaggacctg      240
agggctcana tcttcgcaa tactgengac aatgcccg      278

```

```

<210> 292
<211> 299
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(299)
<223> n = A,T,C or G

```

```

<400> 292
atgcqnggtc gcggcgagang accanctctg gctcatactt gactctaaag ncntcaccag      60
nanttacggn cattgccaat ctgcagaacg atgcgggcat tgtccgcant atttgcgaag      120
atctgagccc tcaggncctc gatgatcttg aagtaanggc tccagttctc gacctggggg      180
cccttcttct ccaagtgtct ccggatcttg ctctccagcc tccggttctc ggtctccaaag      240
ncttctcact ctgtccagga aaagaggcca ggcggncgat cagggtcttt gcattgact      299

```

```

<210> 293
<211> 101
<212> DNA
<213> Homo sapien

```

```

<400> 293
agcgtggtcg cggccgaggt tgtacaagct tttttttttt tttttttttt tttttttttt      60
tttttttttt tttttttttt tttttttttt tttttttttt t      101

```

```

<210> 294
<211> 285
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(285)
<223> n = A,T,C or G

```

```

<400> 294
tcgagcggcc gcccgggcag gtctgccaac accaagattg gcccccgccg catccacaca      60
gttngtgtgc ggggaggtaa caagaaatac cgtgccctga ggntggacgn ggggaatttc      120
tcctggggct cagagtgttg tactcgtaaa acaaggatca tcgatgttgt ctacaatgca      180
tctaataacg agctggttcg taccaagacc ctggtgaaga attgcatcgt gtcctatngac      240
agcacaccgt accgacagtg ggtaccgaag tcccactatg cncct      285

```

```

<210> 295
<211> 216
<212> DNA
<213> Homo sapien

```

<400> 295
tcgagcggcc gcccgggcag gtccaccaca cccaattcct tgctgggtatc atggcagccg 60
ccacgtgccg ggattaccgg ctacatcacc aagtatgaga agcctgggtc tctcccca 120
gaagtgggtc ctcgcccccg cctgggtgac acagaggcta ctattactgg cctggaaccg 180
ggaaacccaat atacaattta tgcattggcc ctgaa 216

<210> 296
<211> 414
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(414)
<223> n = A,T,C or G

<400> 296
agcgtgntcn cggccgagga tggggaagct cgnctgtctt ttctcttcca atcaggggct 60
nnntcttctg attattcttc agggcaanga cataaattgt atattcgnt cccggttcca 120
gnccagtaat agtagcctct gtgacaccag ggccggggccg agggaccact tctctgggag 180
gagaccaggt cttctcctac ttgatgatga agccggtaat cctggcacgt gggcggtctg 240
catgatacca ccaangaatt ggggtgtggtg gacctgcccc ggccggccgc tcgaaaancc 300
gaattctgc aagaatatcc atcacacttg ggccggccgn tcgaaccatg catcntaaaa 360
gggccccaat tccccctta ttagnggaag ccncatttaa caaattccac ttgg 414

<210> 297
<211> 376
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(376)
<223> n = A,T,C or G

<400> 297
tcgagcggcc gcccgggcag gtctcgcggt cgcactgggt atgctgggtc tgttgggtcc 60
cccgcccttc ctggacctcc tggccccctt ggtctctcca gcgctgggtt cqacttcagc 120
ttcttgcctc agccacctca agagaaggct cagcatgggt gccgtacta ccgggtgat 180
gatgccaatg tggttctgtg ccgtgacctc gaggtggaca ccacctcaa gagccttgag 240
ccagcagaat cgaaaacatt cggaaaccaa gaaggccaag cccgcaaaag aaccccgccc 300
gcacctggcc ngaaacctcc aagaangtgc ccacntcttg actgggaaaa aaagggaana 360
ntacttggaa ttggac 376

<210> 298
<211> 357
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(357)
<223> n = A,T,C or G

<400> 298

```

agcgtggtcg cggccgaggt ccacatcggc agggtcggag ccttgccgc catactcgaa    60
ctggaatcca tcggtcatgc tctcgccgaa ccagacatgc ctcttgteet tggggttctt    120
gctgatgtac cagttcttct gggccacact gggtgagtg gggtaacgc aggtctcacc    180
agtctccatg ttgcagaaga ctttgatggc atccaggttg cagccttggt tggggtcatt    240
ccagtactct ccactcttcc aqtcagaaqt ggcacatctt gaaatcacgg cagggtgcgg    300
gcggggttct tgcgggtgc ccttctgggc tcccggaatg ttctnngaac ttgcttg    357

```

```

<210> 299
<211> 307
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(307)
<223> n = A,T,C or G

```

```

<400> 299
agcgtggtcg cggccgaggt ccactaqaqg tctgtgagcc attgccaggg cagagtctct    60
gcgttacaaa ctccatagag ggcttgctgt gcggaggggc tgcctatggg tgctgcgggt    120
catcatggag agtggggcca aaggctgcga ggttggtggg tctgggaaac tccgaggaca    180
gagggctaaa tccatgaagt ttgtggatgg cctgatgatc cacagcggag acctgtttaa    240
ctactacgtt gacacttgct tgtgcgccac gtgttgctca nacangggty ggtgaggcat    300
caaggng                                           307

```

```

<210> 300
<211> 351
<212> DNA
<213> Homo sapien

```

```

<400> 300
tcgagcgggc gcccgggcag gtctgccaag gagaccctgt tatgctgtgg ggactggctg    60
gggcatggca ggccgctctg gcttcccaac cttctgttct gagatggggg tggggggcag    120
tatctcatct ttgggttcca caatgetcac gtgggcaggc aggggcttct tagggccaat    180
cttaccagtt gggtcccagg gcagcatgat cttcaccttg atgccagca caccctgtct    240
gagcaacacg tggcgcacag caagtctcaa cgttaagtaag ttaacagggt ctcgctgtg    300
gatcatcagg ccattccaaa acttcatyga tataaccctc tgcctcggg g          351

```

```

<210> 301
<211> 330
<212> DNA
<213> Homo sapien

```

```

<400> 301
tcgagcgggc gcccgggcag gtgtttcaga ggttccaagg tccactgtgg aggtcccagg    60
agtgtctgtg gtgggcacag aggtccgatg ggtgaaacca ttgacataga gactgttcct    120
gtccagggtg taggggcccc gctctttgat gccattggcc agttggctca gctcccagta    180
cagccgctct ctgttgagtc cagggctttt ggggtcaaga tgatggatgc agatggcatc    240
cactccagtg gctgtccat ccttctcgga cctgagagag gtcagtctgc agccagagta    300
cagagggcca acactggtgt tctttgaata

```

```

<210> 302
<211> 317
<212> DNA
<213> Homo sapien

```

<220>
<221> misc_feature
<222> (1)...(317)
<223> n = A,T,C or G

<400> 302
agcgtggtcg cggccgaggt ctgtactggg agctaagcaa actgaccaat gacattgaag 60
agctggggccc ctacaccctg gacaggaaca gtctctatgt caatgggttc acccatcaga 120
gctctgtgnc caccaccage actcctggga cctccacagt ggatttcaga acctcagggg 180
ctccatcttc cctctccage cccacaatta tggctgctgg cctctctctg gtaccattca 240
cctcaactt caccatcac aacctgcagt atggggagga catgggtcac cctgntcca 300
ggaagttaa caccaca 317

<210> 303
<211> 283
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(283)
<223> n = A,T,C or G

<400> 303
tcgagcggcc gcccgacag gtctgggcgg atagcaccgg gcataatttg gaatggatga 60
ggtctggcac cctgagcagt ccagcgagga cttggtctta gttgagcaat ttggctagga 120
ggatagtatg cagcacggnt ctgagctgtg gggatagctg ccatgaagta acctgaagga 180
ggtgctggct ggtangggtt gattacaggg tggggaacag ctctacact tgccattctc 240
tgcatatact ggttagtgag gtgagcctgg cctctctctt ttg 283

<210> 304
<211> 72
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(72)
<223> n = A,T,C or G

<400> 304
agcgtggtcg cggccgaggt gaggcacagg tgaccggggc tgaagctggg gctgctggnc 60
ctgctgggtc tg 72

<210> 305
<211> 245
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(245)
<223> n = A,T,C or G

<400> 305
 cagcngctcc nacggggcct gngggaccac caacaccgtt ttcaccctta ggcccttttg 60
 cccctctttc tcccttagca ccagggtgac cagcagcnc ancaggacca gcaaatccat 120
 tggggccagc aggaccgacc tcaccacgtt caccayggct tccccgagga ccagcaggac 180
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<210> 306
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<220>
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 <222> (1)...(246)
 <223> n = A,T,C or G

<400> 306
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 agagtggaga gcctggagac cganaaccyg aggctggana gcaaaatccg ggagcacttg 180
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 tggagg 246

<210> 307
 <211> 333
 <212> DNA
 <213> Homo sapien

<220>
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 <223> n = A,T,C or G

<400> 307
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 cttcttctcc aagtgtctcc ggattttgct ctccagcctc cggttctcgg tctccaggct 240
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 tcyttctyga tgctctccat tcttgccaga ccc 333

<210> 308
 <211> 310
 <212> DNA
 <213> Homo sapien

<400> 308
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 gatcagtcag actggctgtt ctcaattctc acctgagcaa ggtaagtctg cagccagagt 180
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 tccgtggtgt tgaacttctt ggaaaccagg gtgttgcatg tttttctca taatgcaagg 300
 ttggtgatgg 310

<210> 309
<211> 429
<212> DNA
<213> Homo sapien

<400> 309
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<210> 310
<211> 430
<212> DNA
<213> Homo sapien

<220>
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<210> 311
<211> 2996
<212> DNA
<213> Homo sapien

<400> 311
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<210> 312

<211> 914

<212> PRT

<213> Homo sapien

<400> 312

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Leu Gly Pro Pro Gln Trp Thr Trp Glu His Leu Gly Leu Gln Phe Leu
20           25           30
Asn Leu Val Pro Arg Leu Pro Ala Leu Ser Trp Cys Tyr Ser Leu Ser
35           40           45
Thr Ser Pro Ser Pro Thr Cys Gly Met Arg Arg Thr Cys Ser Thr Leu
50           55           60
Ala Pro Gly Ser Ser Thr Pro Arg Arg Gly Ser Phe Arg Ala Trp Ser
65           70           75           80
Leu Phe Lys Ser Thr Ser Val Gly Pro Leu Tyr Ser Gly Cys Arg Leu
85           90           95

```

Thr Leu Leu Arg Pro Glu Lys Asp Gly Thr Ala Thr Gly Val Asp Ala
 100 105 110
 Ile Cys Thr His His Pro Asp Pro Lys Ser Pro Arg Leu Asp Arg Glu
 115 120 125
 Gln Leu Tyr Trp Glu Leu Ser Gln Leu Thr His Asn Ile Thr Glu Leu
 130 135 140
 Gly Pro Tyr Ala Leu Asp Asn Asp Ser Leu Phe Val Asn Gly Phe Thr
 145 150 155 160
 His Arg Ser Ser Val Ser Thr Thr Ser Thr Pro Gly Thr Pro Thr Val
 165 170 175
 Tyr Leu Gly Ala Ser Lys Thr Pro Ala Ser Ile Phe Gly Pro Ser Ala
 180 185 190
 Ala Ser His Leu Leu Ile Leu Phe Thr Leu Asn Phe Thr Ile Thr Asn
 195 200 205
 Leu Arg Tyr Glu Glu Asn Met Trp Pro Gly Ser Arg Lys Phe Asn Thr
 210 215 220
 Thr Glu Arg Val Leu Gln Gly Leu Leu Arg Pro Leu Phe Lys Asn Thr
 225 230 235 240
 Ser Val Gly Pro Leu Tyr Ser Gly Cys Arg Leu Thr Leu Leu Arg Pro
 245 250 255
 Glu Lys Asp Gly Glu Ala Thr Gly Val Asp Ala Ile Cys Thr His Arg
 260 265 270
 Pro Asp Pro Thr Gly Pro Gly Leu Asp Arg Glu Gln Leu Tyr Leu Glu
 275 280 285
 Leu Ser Gln Leu Thr His Ser Ile Thr Glu Leu Gly Pro Tyr Thr Leu
 290 295 300
 Asp Arg Asp Ser Leu Tyr Val Asn Gly Phe Thr His Arg Ser Ser Val
 305 310 315 320
 Pro Thr Thr Ser Thr Gly Val Val Ser Glu Glu Pro Phe Thr Leu Asn
 325 330 335
 Phe Thr Ile Asn Asn Leu Arg Tyr Met Ala Asp Met Gly Gln Pro Gly
 340 345 350
 Ser Leu Lys Phe Asn Ile Thr Asp Asn Val Met Lys His Leu Leu Ser
 355 360 365
 Pro Leu Phe Gln Arg Ser Ser Leu Gly Ala Arg Tyr Thr Gly Cys Arg
 370 375 380
 Val Ile Ala Leu Arg Ser Val Lys Asn Gly Ala Glu Thr Arg Val Asp
 385 390 395 400
 Leu Leu Cys Thr Tyr Leu Gln Pro Leu Ser Gly Pro Gly Leu Pro Ile
 405 410 415
 Lys Gln Val Phe His Glu Leu Ser Gln Gln Thr His Gly Ile Thr Arg
 420 425 430
 Leu Gly Pro Tyr Ser Leu Asp Lys Asp Ser Leu Tyr Leu Asn Gly Tyr
 435 440 445
 Asn Glu Pro Gly Pro Asp Glu Pro Pro Thr Thr Pro Lys Pro Ala Thr
 450 455 460
 Thr Phe Leu Pro Pro Leu Ser Glu Ala Thr Thr Ala Met Gly Tyr His
 465 470 475 480
 Leu Lys Thr Leu Thr Leu Asn Phe Thr Ile Ser Asn Leu Gln Tyr Ser
 485 490 495
 Pro Asp Met Gly Lys Gly Ser Ala Thr Phe Asn Ser Thr Glu Gly Val
 500 505 510
 Leu Gln His Leu Leu Arg Pro Leu Phe Gln Lys Ser Ser Met Gly Pro
 515 520 525
 Phe Tyr Leu Gly Cys Gln Leu Ile Ser Leu Arg Pro Glu Lys Asp Gly

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      530              535              540
Ala Ala Thr Gly Val Asp Thr Thr Cys Thr Tyr His Pro Asp Pro Val
545              550              555              560
Gly Pro Gly Leu Asp Ile Gln Gln Leu Tyr Trp Glu Leu Ser Gln Leu
      565              570              575
Thr His Gly Val Thr Gln Leu Gly Phe Tyr Val Leu Asp Arg Asp Ser
      580              585              590
Leu Phe Ile Asn Gly Tyr Ala Pro Gln Asn Leu Ser Ile Arg Gly Glu
      595              600              605
Tyr Gln Ile Asn Phe His Ile Val Asn Trp Asn Leu Ser Asn Pro Asp
      610              615              620
Pro Thr Ser Ser Glu Tyr Ile Thr Leu Leu Arg Asp Ile Gln Asp Lys
625              630              635              640
Val Thr Thr Leu Tyr Lys Gly Ser Gln Leu His Asp Thr Phe Arg Phe
      645              650              655
Cys Leu Val Thr Asn Leu Thr Met Asp Ser Val Leu Val Thr Val Lys
      660              665              670
Ala Leu Phe Ser Ser Asn Leu Asp Pro Ser Leu Val Glu Gln Val Phe
      675              680              685
Leu Asp Lys Thr Leu Asn Ala Ser Phe His Trp Leu Gly Ser Thr Tyr
      690              695              700
Gln Leu Val Asp Ile His Val Thr Glu Met Glu Ser Ser Val Tyr Gln
705              710              715              720
Pro Thr Ser Ser Ser Ser Thr Gln His Phe Tyr Leu Asn Phe Thr Ile
      725              730              735
Thr Asn Leu Pro Tyr Ser Gln Asp Lys Ala Gln Pro Gly Thr Thr Asn
      740              745              750
Tyr Gln Arg Asn Lys Arg Asn Ile Glu Asp Ala Leu Asn Gln Leu Phe
      755              760              765
Arg Asn Ser Ser Ile Lys Ser Tyr Phe Ser Asp Cys Gln Val Ser Thr
      770              775              780
Phe Arg Ser Val Pro Asn Arg His His Thr Gly Val Asp Ser Leu Cys
785              790              795              800
Asn Phe Ser Pro Leu Ala Arg Arg Val Asp Arg Val Ala Ile Tyr Glu
      805              810              815
Glu Phe Leu Arg Met Thr Arg Asn Gly Thr Gln Leu Gln Asn Phe Thr
      820              825              830
Leu Asp Arg Ser Ser Val Leu Val Asp Gly Tyr Phe Pro Asn Arg Asn
      835              840              845
Glu Pro Leu Thr Gly Asn Ser Asp Leu Pro Phe Trp Ala Val Ile Leu
      850              855              860
Ile Gly Leu Ala Gly Leu Leu Gly Leu Ile Thr Cys Leu Ile Cys Gly
865              870              875              880
Val Leu Val Thr Thr Arg Arg Arg Lys Lys Glu Gly Glu Tyr Asn Val
      885              890              895
Gln Gln Gln Cys Pro Gly Tyr Tyr Gln Ser His Leu Asp Leu Glu Asp
      900              905              910
Leu Gln

```

<210> 313
 <211> 656
 <212> DNA
 <213> Homo sapiens

<400> 313

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tgcagtttgt ctacgactcc tcggagaaaa cccacttcaa agacgcagtc agtgcaggga 180
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agaggccggt aggcaggcac cccctattcc tgcctcccca actgcatcag gtagaacaac 600
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```

<210> 314

<211> 519

<212> DNA

<213> Homo sapiens

<400> 314

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gtttaaggat ggtctcggtg gttaggccca ctagaataaa ctgagtccaa taccctctaca 180
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cattcattag ctaatggtgt cctttggtat ttattaaaaa caccacagca tagggggact 360
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ctaccaggga ctttggacat gggggccagc gtttgaaaac ctcatctagt ttttttga 480
gataggccac tggccttgga cctcgccgc gaccacgct 519
```

<210> 315

<211> 441

<212> DNA

<213> Homo sapiens

<400> 315

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cacagagcgt ttattgacac caccactcct gaaaattggg atttcttatt aggttcccc 60
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cagaggcaac cagggtttat agtgctaggt aaatgtcact tcttttgtgc tactgactca 180
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atgattttaa aattccaatg actttcgccc ttgggagaaa ttccaagga aatctctctc 360
gctcgctctc tccgttttcc tttgtgagct tctgggggag ggttagtggg gactttttga 420
tacgaaaaaa tgcattttgt g 441
```

<210> 316

<211> 247

<212> DNA

<213> Homo sapiens

<400> 316

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ccagtctagc ttggtaaaga gagagacatg cccccaacct cggcgccctt tttcctcacg 180
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tgcctgac 247
```

<210> 317
<211> 409
<212> DNA
<213> Homo sapiens

<400> 317
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cacgatgtgg gatgaacagc agccttggtt tgtagccag ggtgtccatg gatttgacct 120
gaatgctccc tggaggccct gtggcgagga caggcactgg atggtccaga ccctctggt 180
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ctgtcaggaa cctggccctg ggagggtca ggtgagctca caaggagagg tcaagccaag 360
ccaaagggtg ggkaacacac aacaccaggg gaaaccagcc cccaaacca 409

<210> 318
<211> 320
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(320)
<223> n = A,T,C or G

<400> 318
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gctggagccc tgcagccgca 320

<210> 319
<211> 212
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(212)
<223> n = A,T,C or G

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acctgctgc agacctggc cgcgaccacg ct 212

<210> 320
<211> 769
<212> DNA
<213> Homo sapiens

<400> 320

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tggagggcgt ctttctccat cagcgcatatc tgagcagggg tactcagatc cttcttgga 180
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<210> 321

<211> 690

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(690)

<223> n = A,T,C or G

<400> 321

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caggggggct ctgtgaggtc cccagggaac cttgtcgcac gactgcagc aaccatggac 240
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aagtgcaggtg cagcctgcag tgtgtgcacg gccggttccg ggaggaggag tgctcgtgcg 360
tctgtgacat cggctacggg ggagcccagt gtgccaccaa ggtgcatttt ccttccaca 420
cctgtgacct gaggatcgac ggagactgct tcattgtgtc ttcagaggca gacacctatt 480
acagaagcca ggatgaaatg tcagagggaat ggccgggtgc tggcccagat caagagccag 540
aaagtgcagg acatcctcgc cttctatctg ggccgctcgg agaccaccaa cgaggtgact 600
gacagtgact ttgagaccag gaacttctgg atngggctca cctacaagac cggccaggnc 660
tccctncgct ggccacacgg ggagaccag 690
```

<210> 322

<211> 104

<212> DNA

<213> Homo sapiens

<400> 322

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gtcgcaagcc ggagcaccac catgtagcct ttcccgaagt accggacctt ctctctctcc 60
accgtcacat caccgacatc atggagcagg accaccacct ggct 104
```

<210> 323

<211> 118

<212> DNA

<213> Homo sapiens

<400> 323

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actagtgaat gaagaacgaa cactggaagt agaaatagag cctgggggtga gagacgga 118
```

<210> 324
<211> 354
<212> DNA
<213> Homo sapiens

<400> 324
tgctctccgg gagcttgaag aagaaactgg ctacaaaggg gacattgccg aatgttctcc 60
agcgggtctgt atggacccag gcttgtcaaa ctgtactata cacatcgtga cagtcaccat 120
taacggagat gatgccgaaa acgcaaggcc gaagccaaag ccaggggatg gagagtctgt 180
ggaagtcatt tctttaccca agaatgacct gctgcagaga cttgatgctc tggtagctga 240
agaacatctc acagtggacg ccaggggtcta ttctacgct cttagcgtga aacatgcaaa 300
tgcaaaagcca ttgaagtgc cctctctgaa attttaagcc caaatatgac actg 354

<210> 325
<211> 642
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(642)
<223> n = A,T,C or G

<400> 325
ncaatgcttga atgggtctct ggtgagngat tgcctccctgg tgggtgaaaca atcgtgtgtg 60
cccactgata ccaagaccaa tgaaagagac acagttaagc agcaatccat ctcatctcca 120
ggcacttcaa taggtctgtg attggtctct qcaccagcag tggtagtcgt acctatttca 180
gagaggtctg aaattcaggt tcttagtttg ccagggacag gccctacctt atattttttt 240
ccatcttcat catccacttc tgcctacagt ttgctgtcta caataactta atgatggatt 300
gagtttatctg ggtggtctct agccatctgg gcagtgtggt tctgtctaac caaagggcct 360
tggcctcaaa ccttcattt gggttagggg ctaacagagc tccctcagata atcttcacac 420
acatgttaact gctggagatc ttattctatt atgaataaga aacgagaagt ttctccaaag 480
tggttagtcag gatctgaagg ctgtcattca gataaccacg cttttctctt tggcttttag 540
cccatccaga ctttgccaga gtcaagccaa ggattgcttt ttgtctacag ttttctgcca 600
aatggcctag ttcttgagta cctggaaacc agagagaaag ag 642

<210> 326
<211> 455
<212> DNA
<213> Homo sapiens

<400> 326
tccgtgagga tgagcttcga gtctctcacc aggcactgca ggggcacagt cacqtcacac 60
accttcacct tctcgtctct cctgctcttg tcattgacaa acttcccgtc ccaggcattg 120
acgatgatga ggcctctctt ggactctctt gcctcaatta tctctcggac agattcctgc 180
atcagccgga cagcggactc cgcctcttgc ttctctctga gcacatcggg ggcggcctct 240
tccctctgct tctccaattc cttctcttct tgagccctga ggtatggttt gatgatcaga 300
cgggtgcattg caaagtagac cactagaggg cccacgggtg catagaacat ggcgctgggc 360
agaagctggt ccgtcaagtg aataggggaa agtatgtct gactggccct gttgagcttg 420
actttgagag aaacgccttg tggaactcca acgct 455

<210> 327
<211> 321
<212> DNA

<213> Homo sapiens

<400> 327

```
ttcactgtga actcgagtc ctcgatgaac tcgcacagat gtgacagccc tgtctccttg 60
ctctctgagt tctcttcaat gatgctgatg atgcagtcga cgatagcgcg cttataactca 120
aagccacctt ctccccgag catggtgaac aggaagtcca taaggacggc gtgtttgcga 180
ggatatttct gacacagggc actgatggcc tggacaacca ccaccttgaa ttcattccgag 240
atttctgaca tgaaggagga gatctgcttc atgaggcggc cgatgctgct ctgctgcgcc 300
gtcttaagga ggttggtgat g                                     321
```

<210> 328

<211> 476

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(476)

<223> n = A,T,C or G

<400> 328

```
tgcaggaggg gccatggggg ctgtgaatgg gatgcagccc catgggtgcc ctgataaatc 60
caqtgtgcag tctgatgaag tctgggtggg tgtggtctac gggctggcag ctacctgat 120
ccaagaggta atgcactcct ttccccatct ctccaccatc tgtatcctgg ccmagaaaaa 180
cttcccttca aaccaaccaa aatttctctt caaaggcata acccaaatgc catccttggt 240
ccggtctaat aaagctcccc ccatttttcc cctgggtatgc attccagyc tccctggcct 300
tncagggctt nctgtctgtg ggtcatagtt tatctcttcc caattgctgg gagctccttg 360
aaggcaaaaga ctctactgcc tccatctatc cagtggaaat gqctcttcag agsgtgccaa 420
gttagtatgt atgactgtca tctctcccaa caggggctga cttggsaggg ctcca 476
```

<210> 329

<211> 340

<212> DNA

<213> Homo sapiens

<400> 329

```
cgaggagat tgcagcacc ctgatggaga gtgagatgat cgagatcttg tcagtgttag 60
ctaagggtga ccacagccct gtcacaaggg ctgctgcagc ctgcttgagc aaagcagtgg 120
aatatgggct tatecaaccc aaccaagatg gagagtgagg ggggtgtccc tgggcccag 180
gtcatgcac acgctaccta ttgtggcagc gagagtaagg acggaagcag ctttggctgg 240
tgggtggctg catgcccaat actcttgccc atctctgctt gctgccctag gatgtctct 300
gtctgtgagtc agcggccacg ttcagtcaca cagccctgct                                     340
```

<210> 330

<211> 277

<212> DNA

<213> Homo sapiens

<400> 330

```
tgtcaccatc acattggtgc caaataccca gaagacatcg tagatgaaga gtccgcccag 60
caggatgcag ccagtgtctg cattgttgag gtgcaggagc tctactccat taaggagaa 120
ggccaggcca aaaagggtgt tggcaatcca gtgcttcttc agcagggtacc agacgccaac 180
gatgctgctc aggccagggc acaccaggtc cttggtgtca aattcataat tgatgatctc 240
ctccttgttt tcccagaacc ctgtgtgaag agcagac                                     277
```

<210> 331
<211> 136
<212> DNA
<213> Homo sapiens

<400> 331
ttgcttccca cctcctttct ctgtcctctc ctgaggttct gccttacaat ggggacactg 60
atacaaacca cacacacaat gaggatgaaa acagataaca ggtaaaatga cctcacctgc 120
ccgggcgggc gctcga 136

<210> 332
<211> 184
<212> DNA
<213> Homo sapiens

<400> 332
ttgtgagata aacgcagata ctgcaatgca ttaaaacgct tgaatactc atcagggatg 60
ttgctgatct tattgttctc taagtagaga gttagaagag agacagggag accagaaggc 120
agctctggcta tctgattgaa gctcaagtca aggtatttga gtgatttaag accttataaa 180
gcag 184

<210> 333
<211> 384
<212> DNA
<213> Homo sapiens

<400> 333
cggaaaaactt cgaggaattg ctcaaagtgc tgggggtgaa tgtgatgctg aggaagattg 60
ctgtggctgc agcgtccaag ccagcagtgg agatcaaaca ggagggagac actttctaca 120
tcaaaacctc caccaccgtg cgcaccacag agattaactt caaggttggg gaggagtgtg 180
aggagcagac tgttgatggg aggcctgtga agagcctggt gaaatgggag agtgagaata 240
aaatgggtctg tgagcagaag ctctgaagg gagagggccc caagacctg tggaccagag 300
aactgaccaa cgatggggaa ctgatcctga ccatgacggc ggatgacgtt gtgtgcacca 360
gggtctacgt ccgagagtga gcgg 384

<210> 334
<211> 169
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(169)
<223> n = A,T,C or G

<400> 334
cnacaaacag agcagacacc ctggatcgg tctgtctact ggccaggacg gctggaccgt 60
aaaattgaat ttccacttcc tgaccgcgc cagaagagat tgattttctc cactatcact 120
agcaagatga acctctctga ggaggttgac ttggaagact atgtngccc 169

<210> 335
<211> 185
<212> DNA
<213> Homo sapiens

<400> 335

```
ccaggtttgc agcccaggct ccacatcagc ggactgcctc gcaatacttc atgctgttgc 60
tgctgactga tgggtgctgtg acggatgtgg aagccacacg tgaggctgtg gtgcgtgcct 120
cgaaacctgc catgtcagtg atcattgtgg gtgtgggtgg tgctgacttt gagggcatgg 180
agcag 185
```

<210> 336

<211> 358

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(358)

<223> n = A,T,C or G

<400> 336

```
ctgcccctgc cttacggcgg ccaganaac acccaggatg gcattggccc caaacttggg 60
tttgttctca gtcccatcca actccagcat cagggtgtcc agtttctctt gctccaccac 120
agagagacct gagctgatga gggctggcgc gatggtggag ttgatgtggt ccactgcctt 180
caggacacct ttgcctaagt aacgtgtttt gtctccatcc ctacgtccca gggcctcata 240
gatgcccgta gaggtccac tgggcactgc agcccggaaa agacctttgg cagtatagag 300
atccacctcc actgtggggg tcccgcggga gtccaggatc tcccggggcc agatcttc 358
```

<210> 337

<211> 271

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(271)

<223> n = A,T,C or G

<400> 337

```
cacaaagcca ccagcnggg aaatcagaat ttacttgatg caactgactt gtaatagcca 60
gaaatcctgc ccagcatggg attcagaacc tggctctgca ccaaatccac cgtcaaaagt 120
catacaggat aaaacaaatt caattgcctt ttccacatta atagcatcaa gtttcccca 180
caaaagccaaa gttgccaccg cacaaaaaga gaattttgtg tcaatttttc cctactttat 240
aaaagtagat ttttcacatc ccatgaagca g 271
```

<210> 338

<211> 326

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(326)

<223> n = A,T,C or G

<400> 338

```
ctgtgtctcc gactngnnca tctcaggtac caccgactgc actggggggg gccctctggg 60
gggaaaggct ccacggggca gggatacatc tcgaggccag tcatctcttg gaggcagccc 120
aatcagggtca aagattttgc ccaactggtc ggcttcagag tttccacaga agagaggcct 180
```

tcgacgaaac atctctgcaa agatacagcc aacactccac atgtccacag gtgttgcata 240
tgtggactgc agaagaactt cgggagctcg gtaccagagt gtaacaacca cgggtgtaag 300
tgccatctgg tagctgtaga ttctgg 326

<210> 339

<211> 260

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(260)

<223> n = A,T,C or G

<400> 339

ttcacctgag gactcatttc gtgccctttg ttgacttcaa gcaaagacct tcanggtctn 60
caaggacgnc acatttccac ttgcgaatgn nctcanggct catcttgaag aanaagnanc 120
ccaagtgtcg gatcccagac tcgggggtaa ccttgtgggt aagagctcat ccagtttatg 180
cttttaggacg tccanctact cgggggagct ggaagcctgc gtggatgagg ccttcttga 240
cctcggccgc gaccacqcta 260

<210> 340

<211> 220

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(220)

<223> n = A,T,C or G

<400> 340

ctggaagccc ygcctnggnt ggcagcggaa ggagccaggc aggttcacgc agcgggtgtg 60
gcagtagcgg tagcggcact cgtctatgtc cacacactcg ggcccqatct tgcggtaacc 120
atcagggcag gtgcactgat aggagccagg caagttatgg cagtcttggc tggggcgaca 180
gtcgtgcagg gcttgggcac actcgtccac atccacacag 220

<210> 341

<211> 384

<212> DNA

<213> Homo sapiens

<400> 341

ctgctaccag gggagcgaga gctgactatc ccagcctcgg ctaatgtatt ctacgccatg 60
gatggagctt cacacgattt cctcctgcgg cagcggcgaa ggctccttac tgctacaccg 120
ggcgtcacca gtggcccgtc tgccctcagga actcctccga gtgagggagg agggggctcc 180
tttcccagga tcaaggccac agggagggaag attgcacggg cactgttctg agggaggaaac 240
cccgttggtc tacagaagtc atggtgttca taccagatgt gggtagccat cctgaatggt 300
ggcaattata tcacattgag acagaaatc agaaaggga cagccaccc tggggcagtg 360
aagtgccact ggtttaccag acag 384

<210> 342

<211> 245

<212> DNA

<213> Homo sapiens

```
<400> 342
ctggctaagc tcattattgt tactgggtggg caccatgtcc ttgaagcttc aggcaagcaa 60
tgtaaccaac aagaatgacc ccaagtcctt caactctcga gtcttcattg gaaacctcaa 120
cacagctctg gtgaagaaat cagatgtgga gaccatcttc tctaagtatg gccgtgtggc 180
cggctgtctt gtgcacaagg gctatgcctt tgttcagtac tccaatgagc gccatgcccc 240
ggcag 245
```

```
<210> 343
<211> 611
<212> DNA
<213> Homo sapiens
```

```
<400> 343
ccaaaaaaat caagatttaa tttttttatt tgcactgaaa aactaatcat aactgttaat 60
tctcagccat ctttgaagct tgaaagaaga gtctttggta ttttgtaaac gttagcagac 120
tttctgcca gtgtcagaaa atcctattta tgaatcctgt cggatctcct tggatatcga 180
aaaaaatacc aaatagtacc atacatgagt tatttctaag ttgaaaaat naaaagaaat 240
tgcatacacac taattacaaa atacaagttc tggaaaaaat attttcttc attttaaacc 300
tttttttaac taataatggc tttgaaagaa gaggtttaat ttgggggtgg taactaaat 360
caaaagaaat qattgacttg aggytctctg tttggttaaga atacatcatt agcttaata 420
agcagcagaa ggtagtttt aattatgtag cttctgttaa tattaagtgt ttttgtctg 480
ttttacctca atttgaacag ataagtttg ctcgatgctg gacatgcctc agaaccatga 540
atagcccgtc ctagatcttg ggaacatgga tcttagagtc ctttggaaata agttcttata 600
taaatacccc c 611
```

```
<210> 344
<211> 311
<212> DNA
<213> Homo sapiens
```

```
<220>
<221> misc_feature
<222> (1)...(311)
<223> n = A,T,C or G
```

```
<400> 344
nctcgaaaaa gcccaagaca gcagaagcag acacctccag tgaactagca aagaaaaqca 60
aagaagtatt cagaaaaagag atgtcccagt tcacgtcca gtgcctgaac ccttaccgga 120
aacctgactg caaagtggga agaattacca caactgaaga ctttaaacat ctggctcgca 180
agctgactca cgggtgttatg aataaggagc tgaagtactg taagaatcct gaggacctgg 240
agtgcacatg gaatgtgaaa cacaaaacca aggantacat taanaagtag atgcannan 300
tttggggctt g 311
```

```
<210> 345
<211> 201
<212> DNA
<213> Homo sapiens
```

```
<400> 345
cacacgggtc tcccgaactg caacctggag gcccaggccc tgtggaagga gccgggcagc 60
aatgtcacca tgagtgtgga tgcctgagtgt gtgcccatgg tcagggacct tctcaggtac 120
tttactctcc gaaggattga catcaccctg tcgtcagtc aagtgtctcca caagctggcc 180
tctgcctatg gggccaggca g 201
```

<210> 346
<211> 370
<212> DNA
<213> Homo sapiens

<400> 346
ctgctccagg gcgtggtgtg ccttcgtggc cctgcctcc tccgaggagc caggetgtgt 60
tctcttcaga atgttctgga gcagcagttt gaggcgggtg atgcgttgga agggcagaat 120
cagaaaggac ttgagggaaa ggcgctggca gacggggtcg ctctccagct tctccaagac 180
ctcccggaaa ttgctgttgc tattcatcag gctctggaag gtgcgttcct gataggctct 240
gttggtgaca taaggcaggt agaccggcg gaagtctggg gcgtggttca ggactacgtc 300
acatacttgg aaggagaaga tattgttctc aaagtctctc tccaggtctg aaaggaacgt 360
ggcgtgacg 370

<210> 347
<211> 416
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(416)
<223> n = A,T,C or G

<400> 347
ctgttgtgct gtgtatggac gtgggcttta ccatgagtaa ctccattcct ggtatagaat 60
cccatttga acaagcaaaag aaggtgataa ccatgtttgt acagcgacag gtgttttctg 120
agaacaagga tgagattgct ttagtcctgt ttggtacaga tggcactgac aatccccctt 180
ctggtgggga tcagtatcag aacatcacag tgcacagaca tctgatgcta ccagattttg 240
atttgcctga ggacattgaa agcaaaatcc aaccagggtc tcaacaggct gacttctctg 300
atgcactaat cgtgagcatg gatgtgattc aacatgaaac aataggaaag aagtttgag 360
aagaggcata ttgaaatatt cactgacctc aaqcagcccg attcagcaaa agtcan 416

<210> 348
<211> 351
<212> DNA
<213> Homo sapiens

<400> 348
gtacaggaga ggatggcagg tgcagagcgg gcactgagct ctgcagggtga aagggtcgg 60
cagttggatg ctctcctgga ggctctgaaa ttgaaacggg caggaaatag tctggcagcc 120
tctacagcag aagaaacggc aggcagtgcc cagggacgag caggagacag atgccttctc 180
cttgtctcaa ctgcaaagag gcgttccttc ctctttcact aatcctcctc agcacagacc 240
ctttacgggt gtcaggctgg gggacagtaa ggtctttccc ttcacacaag gccatatctc 300
aggctgtctc agtgggggga aaccttgga c aataccggg ctttcttggg c 351

<210> 349
<211> 207
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(207)
<223> n = A,T,C or G

<400> 349
nccgggacat ctccaccctc aacagtggca agaagagccc ggagactgaa cacaaggcct 60
tgaccagtga gattgcactg ctgcagtcca ggctgaagac agagggctct gatctgtgcg 120
acagagttag cgaaatgcag aagctggatg cacaggtcaa ggagctggtg ctgaagtcgg 180
cggtaggggc tagcgccctg gtggctg 207

<210> 350
<211> 323
<212> DNA
<213> Homo sapiens

<400> 350
ccatacaggg ctgttgccca ggccctagag gtcattcctc gtaccctgat ccagaactgt 60
ggggccagca ccataccgtct acttacctcc cttcgggcca agcacacca ggagaactgt 120
gagacctggg gtgtaaatgg tgagacgggt actttggtgg acatgaagga actgggcata 180
tgygagccat tggctgtgaa gctgcagact tataagacag cagtggagac ggcagttctg 240
ctactgcgaa ttgatgacat cgtttcaagg cacgaaaaga aaggcgatga ccagagccgg 300
caaggcgggg ctcctgatgc tgg 323

<210> 351
<211> 353
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)... (353)
<223> n = A,T,C or G

<400> 351
cgccgcaccc cntggctccct tccantccct tttcctttnt cnyggaaacgt gtagcggtt 60
tggttttgtt ttgtagggtt tttttccctc tccacctctc cctgtctctt ttgctccatg 120
ttgtccgttt ctgtgggggt aggtttatgt ttttaatcat ctgaggtcac gctatatttc 180
tccggactcg cctgcttggg ggcgattctc caccgggtta tatgggtcgt ccttttttcc 240
ttttgttgcg aatcvgagcc ttcttccctc agcttctgcc ttttgaactt tgtttcttcg 300
ttctgaaacc atacttttac ctgagtttcc gtgaggtcga ggctgtgtgc caa 353

<210> 352
<211> 467
<212> DNA
<213> Homo sapiens

<400> 352
ctgccacac tgatcaattg cgagatgtcc ttagggtaaa agaacaggaa ttgaagtctg 60
aatttgagca gaacctgtct gagaaactct ctgaacaaga attacaattt cgtcgtctca 120
gtcaagagca agttgacaac ttactcttg atataaatac tgccatagcc agactcagag 180
gaatcgaaac ggctgttcag agccatgcag ttgctgaaga ggaagccaga aaagcccacc 240
aactctggct ttcagtggag gcattaaagt acagcatgaa gacctcatct gcagaaacac 300
ctactatccc gctgggtagt gcagttgagg ccatacaagc caactgttct gataatgaat 360
tcaccaaaagc tttaaccgca gctatccctc cagagtcctc gaccctgtggg gtgtacagt 420
aagagaccct tagagccctg ttctatgctg ttcaaaaact ggcccga 467

<210> 353
<211> 350

<212> DNA
<213> Homo sapiens

<400> 353
ctgctgcagc cacagtagtt cctcccatgg tgggtggccc tcctggctct gctggcccaq 60
gaaatctgtc cccaccagga acagcccctg gaaaacggcc ccgtccctca ccaccttggt 120
gaaatgctgc acgggaactg cctcctggag gaccagcttt acctcccca gacattgtc 180
ctgattgtgt agttttctg gactgcattt caaattgact caggaaactgt ttattgcatg 240
gagttacaac aggattctga ccatgaagtt ctcttttagg taacagatcc attaaacttt 300
ttgaagatgc ttcagatcca acaccaacaa gggcaaaccc ctttgactgg 350

<210> 354
<211> 351
<212> DNA
<213> Homo sapiens

<400> 354
atttagatga gatctgaggc atggagacat ggagacagta tacagactcc tagatttaag 60
ttttaggttt tttgcttttc taatcaccaa ttcttatata caatgtatat tttagactcg 120
agcagatgat catcttcac ttaagtcatt ccttttgact gagtatggca ggattagagg 180
gaatggcagt atagatcaat gtctttttct gtaagtata ggaaaaacca gagaggaaaa 240
aaagagctga caattggaag gtagtagaaa attgacgata atttcttctt aacaaataat 300
agttgtatat acaaggaggc tagtcaacca gattttatct gttgagggcg a 351

<210> 355
<211> 308
<212> DNA
<213> Homo sapiens

<400> 355
ttttggcgca agttttacag atttttattaa agtcgaagct attggtcttg gaagatgaaa 60
atgcaaatgt tgatgaggtg gaattgaagc cagatacctt aataaaatta tatcttgytt 120
ataaaaaata gaaattaaag gttaacatca atgtgccaat gaaaaccgaa cagaagcagg 180
aacaagaaac cacacacaaa aacatcgagg aagaccgcaa actactgatt caggcggcca 240
tcgtgagaat catgaagatg aggaaggttc tgaaacacca gcagttactt ggcgaggtcc 300
tcactcag 308

<210> 356
<211> 207
<212> DNA
<213> Homo sapiens

<400> 356
ctgtcccaag tgctcccaga aggcaggatt ctgaagacca ctccagcgat atgttcaact 60
atgaagaata ctgcaccgcc aacgcagtca ctgggccttg ccgtgcaccc tccccagct 120
ggtactttga cgtggagagg aactcctgca ataacttcat ctatggaggc tgccggggca 180
ataagaacag ctaccgctct gaggagg 207

<210> 357
<211> 188
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature

<222> (1)...(188)

<223> n = A,T,C or G

<400> 357

```
tcgaccacgc cctcgtagcg catgngctnc aggacgatgc tcagagtgat gaacaccccc 60
gtgcggccca cgcagcact gcagtgccc gtgalaagcc catcctgtcc aaactgctcc 120
ttggtcttat gcacctgcc gatgaagtc atgaatccct cgcctgtctt gggcacgccc 180
tgctctgg                                     188
```

<210> 358

<211> 291

<212> DNA

<213> Homo sapiens

<400> 358

```
ctgggagcat cggcaagcta ctgccttaaa atccgatctc cccgagtgc caatttctgt 60
cccttttaag ggttcacaa actaaagatt tcacatgaaa gggttgtgat tgatttgagc 120
aggcagcgcg tacgtgacag gggctgcac caccgggtgt cagagagaaa cagaacaggg 180
caggggaatt cacaatgttc ttctatacaa tggctggaat ctatgaataa catcagtttc 240
taagtattgg gttgattttt aactactggg tttagggcag gcaggcccag g          291
```

<210> 359

<211> 117

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(117)

<223> n = A,T,C or G

<400> 359

```
gccaccacac tccagcctgg ccaatacagc aagactgtct caaaaaaaaa aaaaaaaaaa 60
cccaaaaaaa ctcaaaaang taatgaatga tanncaangn gccttttcta gaaaaag   117
```

<210> 360

<211> 394

<212> DNA

<213> Homo sapiens

<400> 360

```
ctgttcctct ggggtggtcc agttctagag tgggagaaa ggagtcaggc gcattgggaa 60
tcgtgggtcc agtctggttg cagaatctgc acatttgcca agaaattttc cctggttggg 120
aagtttgccc cagctttccc gggcacacca ccttttgccc caagtgtctg ccggtcgacc 180
aatctgcctg ccacacattg accaagccag acccggttca cccagctcga ggatcccagg 240
ttgaagagtg gcccttgag gccctggaaa gaccaatcac tggacttctt cccttgagag 300
tcagaggtea cccgtgattc tgctgcacc ttatcattga tctgcagtga tttctgcaaa 360
tcaagagaaa ctctgcaggg cactcccttg ttct                                     394
```

<210> 361

<211> 394

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature
<222> (1)...(394)
<223> n = A,T,C or G

<400> 361
ctgggcggat agcaccgggc atattttntc natggatgag gtctggcacc ctgagcagtc 60
cagcgaggac ttggtcttag ttgagcaatt tggctaggag gatagtagc agcaccgttc 120
tgagtctgtg ggatagctgc catqaagtaa cctgaaggag gtgctggctg gtagggggtg 180
attacagggg tgggaacagc tcgtacactt gccattctct gcatatactg gttagtgagg 240
tgagcctggc gctcttcttt gcgctgagct aaagctacat acaatggctt tgtgqacctc 300
ggccgcgacc acgctaagcc gaattccagc acactggcgg ccgttactag tggatccgag 360
ctcgtacca agcttggcgt aatcatggtc atag 394

<210> 362
<211> 268
<212> DNA
<213> Homo sapiens

<400> 362
ctgcgcgtgg accagtcagc ttccgggtgt gactggagca gggcttgctg tcttcttcag 60
agtcactttg caggggttgg tgaagctgct cccatccatg tacagctccc agtctactga 120
tgtttaagga tggctcctggg ggttagggcc actagaataa actgagtcga atacctctac 180
acagttatgt ttaactgggc tctctgacac cgggaggaag gtggcggggt ttaggtgttg 240
caaaacttcaa tggttatgag gggatgtt 268

<210> 363
<211> 323
<212> DNA
<213> Homo sapiens

<400> 363
ccttgacctt ttcagcaagt gggaaggtgt aatccgtctc cacagacaag gccaggactc 60
gtttgtaccc gttgatgata gaatggggta ctgatgcaac agttgggtag ccaatctgca 120
gacagacact ggcaacattg cggacaccct ccaggaaagc agaatgcaga gtttctcttg 180
tgatatcaag cacttcaggg ttgtagatgc tggcattgtc gaacacctgc tggatgacca 240
gccccaaagga gaagggggag atgttgagca tgttcagcag cgtggccttg ctggtctcca 300
ctttgtctcc agtcttgatc aga 323

<210> 364
<211> 393
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(393)
<223> n = A,T,C or G

<400> 364
ccaagctctc catcgctccc gtgcgcagng gctactgggg gaacaagatc ggcaagcccc 60
acaactgtccc ttgcaagggt acaggccqct gcggctctgt gctggtagc ctcactactg 120
caccagggg cactggcatc gtctccgcac ctgtgcctaa gaagctgctc atgatggctg 180
gcacgatga ctgctacacc tcagcccggg gctgcaactc caccctgggc aacttcgcca 240
aggccacctt tgatgccatt tctaagacct acagctacct gaccccgac ctctggaagg 300
agactgtatt caccaagctc cctatcagg agttcactga ccacctcgtc aagaaccaca 360

ccagagtcctc cgtgcagcgg actcaggttc cag 393

<210> 365

<211> 371

<212> DNA

<213> Homo sapiens

<400> 365

cctcctcaga gcggtagctg ttcttattgc cccggcagcc tccatagatg aagttattgc 60
aggagtccct ctccacgtca aagtaccagc gtgggaagga tgcaaggcaa ggcccagtga 120
ctgcgttggc ggtgcagtat tcttcacagt tgaacatata gctggagcgg tcttcagaat 180
cctgccttct gggagcactt gggacagagg aatccgctgc attcctgctg gtggacctcg 240
gccgcgacca cgctaagcgg aattccagca cactggcggc cgttactagt ggatccgagc 300
tcggtaccac gcttggcgta atcatygtca tagctgtttc ctgtgtgaaa ttgttatccg 360
ctcacaattc c 371

<210> 366

<211> 393

<212> DNA

<213> Homo sapiens

<400> 366

atttcttgcc agatgggagc tttttggtga agactccttt cgggaaaagt tttttggctt 60
cttcttcagg gatggttggg agggaccatca cactatcccc atccttccaa tcaactgggg 120
tggcaacctt tttttctgct gtcagctgga gagagatgac taccctgaga atctcatcaa 180
agtctctgcc agtggtagct gggtagagga tagacagctt cagcttctta tcaggacca 240
aaacaaacac cacacgagct gccacaggca tgcccttttc atccttctct gctggatcca 300
gcatgcccaa caggatggca agctcccgat tctatcctc gatgatggga aaaggtaact 360
tttctgtggg ctcttcacaa ttgtaagcat tga 393

<210> 367

<211> 327

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(327)

<223> n = A,T,C or G

<400> 367

ccaqctctgt ctcatacttg actctaaaagt cttnagcagc aagacgggca ttgnnaatct 60
gcagaacgat gcgggcattg tccacagtat ttgcgaagat ctgagccctc aggtcctcga 120
tgatcttgaa gtaatggctc cagtctctga cctggggctc cttcttctcc aagtgcctcc 180
ggattttgct ctccagcctc cggttctcgg tctccaggct cctcaactctg tccaggtaag 240
aggccaggcg gtcgttcagg ctttgcctgg tctccttctc gttctggatg cctcccatcc 300
ctgccagacc cccgctcttc ccggtgg 327

<210> 368

<211> 306

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(306)

<223> n = A,T,C or G

<400> 368

```
ctggagaagg accttcagcag tttnaagaag tactgccaag tcatccgtgt cattgcccac 60
accagatgc gcctgcttcc tctgcgccag aagaaggccc acctgatgga gatccagggtg 120
aacggagcga ctgtggccga gaagctggac tgggcccgcg agaggcttga gcagcaggta 180
cctgtgaacc aagtgtttgg gcaggatgag atgatcgacg tcatcggggt gaccaagggtc 240
aaaggctaca aaggggtcac cagtcgttgg cacaccaaga agctgccccg caagaccacac 300
cgagga                                           306
```

<210> 369

<211> 394

<212> DNA

<213> Homo sapiens

<400> 369

```
tcgacccaca ccggaacacg gagagctggg ccagcattgg cacttgatag gatttcccgt 60
cggctgccac gaaagtgcgt ttttttgtgt tctcggttg gaaccgtgat ttccacagac 120
ccttgaaata cactgcgttg acgaggacca gtctggtgag cacaccatca ataagatctg 180
gggacagcag attgtcaatc atatccctgg ttccattttt aaccatgca ttgatggat 240
cacaggcaga ggctggatcc tcaaaagtca cttccggac ctccactgg aacacatctt 300
tgttccttgt aacaaaaggc acttcaattt cagaggcatt cttaacaaac acggcggttag 360
ccactgtcac aatgtcttta ttctcttgg agac                                           394
```

<210> 370

<211> 653

<212> DNA

<213> Homo sapiens

<400> 370

```
ccaccacacc caattccttg ctggtatcat ggcagccgcc acgtgccagg attaccggt 60
acatcatcaa gtatgagaag cctgggtctc ctcccagaga agtgggtccct cggccccgcc 120
ctggtgtcac agaggctact attactggcc tggaacgggg aaccgaatat acaatttatg 180
tcattgccct gaagaataat cagaagagcg agccctgat tggaggaaa aagacagacg 240
agcttcccca actggttaacc ctccacacc ccaatcttca tggaccagag atcttggatg 300
ttccttccac agttcaaaaag acccctttcg tcaccacccc tgggtatgac actggaaatg 360
gtattcagct tcctggcact tctggtcagc aaccagtggt tgggcaacaa atgatctttg 420
aggaacatgg ttttaggcgg accacaccgc ccacaacggc caccaccata aggcataaggc 480
caagaccata cccgccgaat gtaggacaag aagctctctc tcagacaacc atctcatggg 540
ccccattcca ggacacttct gagtacatca ttctatgtca tctgtttggc actgatgaag 600
aacccttaca gttcagggtt cctggaactt ctaccagtgc cactctgaca gga                                           653
```

<210> 371

<211> 268

<212> DNA

<213> Homo sapiens

<400> 371

```
ctgcccagcc cccattggcg agtttgagaa ggtgtgcagc aatgacaaca agaccttcga 60
ctcttctctg cacttctttg ccacaaagtg caccctggag ggcaccaaga agggccacaa 120
gtcccaactg gactacatcg ggccttgcaa atacatcccc ccttgccctg actctgagct 180
gaccgaattc cccctgcgca tgcgggactg gctcaagaac gtcctggtca ccctgtatga 240
gagggatgag gacaacaacc ttctgact                                           268
```

<210> 372
<211> 392
<212> DNA
<213> Homo sapiens

<400> 372
gctgggtgccc ctgggtgaacg tggacctcct ggattggcag gggccccagg acttagaggt 60
ggaactgggtc cccctgggtcc cgaaggagga aagggtgctg ctggtccctcc tgggccacct 120
ggtgctgctg gtactcctgg tctgcaagga atgcctggag aaagaggagg tcttggaaagt 180
cctgggtccaa agggtgacaa ggggtgaacca ggcgggtccag gtgctgatgg tgtcccaggg 240
aaagatggcc caaggggtcc tactggtcct attggtcctc ctggcccagc tggccagcct 300
ggagataagg gtgaagggtg tgcctccgga cttccaggta tagctggacc tcgtggtagc 360
cctggtgaga gaggtgaaac ctcgcccgcg ac 392

<210> 373
<211> 388
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(388)
<223> n = A,T,C or G

<400> 373
ccaagcgctc agatcggcaa ggggcaccan tttgatctg cccagtgcac agccccacaa 60
ccagggtcagc gatgaaggta tcttcagttc ccccggaacg atgagacacc atgacgcccc 120
aaccattggc ctgggccagc ttgcacgctc gaagagactc ggtcacggag ccaatctggg 180
tgactttgag caggaggcag ttgcaggact tctcgttcac ggccttggcg atcctctttg 240
ggttggtcac tgtgagatca tccccacta cctggattcc tgcactggct gtgaacttct 300
gccaaagctc ccagtcattc tggtcaaaagg gatcttcgat agacaccact gggtagtctc 360
tgatgaagga cttgtacagg tcagccag 388

<210> 374
<211> 393
<212> DNA
<213> Homo sapiens

<400> 374
ctgacgaccg cgtgaacccc tgcattgggg gtgtcactc cttccatgag acactctacc 60
agaaggcggg tgatyggtgt cctttccccc aagttatcaa atccaagggc ggtgttgtgg 120
gcacaaaggt agacaagggc gtgggtcccc tggcagggac aaatggcgag actaccacc 180
aagggttgga tgggctgtct gaggcgtgtg cccagtacaa gaaggacgga gctgacttcg 240
ccaagtggcg ttgtgtgctg aagattgggg aacacacccc ctcagccctc gccatcatgg 300
aaaatgccaa tgttctggcc cgttatgccg gtatctgccg gcagaatggc attgtgcccc 360
tcgtggagcc tgagatcctc cctgatgggg acc 393

<210> 375
<211> 394
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(394)

<223> n = A,T,C or G

<400> 375

```
ccacaaatgg cgtgggccat gtcacacacn tttttctgca gccctccagcc aacagacctc 60
aggaaaagagc ggatgaactt gcagactctg cgtttgagat cttcaaaaca gcatcagcgr 120
tttccagggc tttccagagc tctgtgcgac tagccctctt ctatcaaaag ttattagaga 180
ggatgaagca ttagcttgaa gcactacagg aggaatgcac cacggcagct ctccgccaat 240
ttctctcaga tttccacaga gactgtttga atgttttcaa aaccaaagtat cacactttaa 300
tgtacatggg ccgcaccata atgagatgtg agccttgtgc atgtggggga ggagggagag 360
agatgtactt tttaaatcat gttcccccta aaca 394
```

<210> 376

<211> 392

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(392)

<223> n = A,T,C or G

<400> 376

```
ctgcccagcc cccattggcg agtttgattn ggtgtgcagc aatgacaaca agaccttoga 60
ctcttctctg cacttctttg ccacaaagtg caccctggag ggcaccaaga agggccacaa 120
gctccacctg gactacatcg gcccttgcaa atacatcccc ccttgccctgg actctgagct 180
gaccgaattc cccctgcgca tgcgggactg gctcaagaac gtctgtgtca cctgtgatga 240
gagggatgag gacaaacaacc ttctgactga gaagcagaag ctgcgggtga agaagatcca 300
tgagaatgag aagcgctctg aggcaggaga ccaccccttg gagctgtctg cccgggactt 360
cgagaagaac tataacatgt acatcttccc tg 392
```

<210> 377

<211> 292

<212> DNA

<213> Homo sapiens

<400> 377

```
caatgttttg tgccttaacc ccccaatttc tgtgagatgg atggccagtg caagcgtgac 60
ttgaagtgtt gcatgggcat gtgtgggaaa tcttgcgttt cccctgtgaa agcttgattc 120
ctgcccatac gaggaggctc tggagtccctg ctctgtgttg tccaggtcct ttccaccctg 180
agacttggct ccaccactga tctctcctt tggggaaagg cttggcacac agcaggcttt 240
caagaagtgc cagttgatca atgaataaat aaacgagcct atttctcttt gc 292
```

<210> 378

<211> 395

<212> DNA

<213> Homo sapiens

<400> 378

```
ctgctgtctc agcgaagggt ttctggcata tccaatgata aggctgccc aagactgttc 60
aataccagca ccagaaccag ccactcctac tgttgacga cctgcaccaa taaatttggc 120
agcagtatca atgtctctgc tgattgcact ggtctgaaac tccctttgga ttagtggaga 180
cacaccattc tgggccctga ttttcttaag atagaactcc aactctttgc cctctagcac 240
atagccatct gctcgccac actgtcccgg ccttgaagcg atgcacgcaa gaagcttggc 300
ctgctggaac tgctcctcca ggaactgtct gattttggca ttctttttcc ttctatcata 360
tttcttctga atttttttaga tcgttttttt ttttaa 395
```

<210> 379
<211> 223
<212> DNA
<213> Homo sapiens

<400> 379
ccagatgaaa tctgtccgca atggctgtgg gaaggtgttc tgtgtcactc ccaattttctg 60
agctccagcc accaccaggc tgagcagtga ggagagaaag tttctgcctg gccctgcac 120
tggttccagc caacctgccc tccccctttt cgggactctg tattccctct tgggctgacc 180
acagcttctc cctttcccaa ccaataaagt aaccactttc agc 223

<210> 380
<211> 317
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(317)
<223> n = A,T,C or G

<400> 380
tcgaccacag tattccaacc ctctgtgcn tngagaactg atggaggggtg ctgacaacca 60
gggtgcagga gaacaaggta gaccagttag gcagaatatg tatcggggat atagaccacg 120
attccgcagg ggccctcttc gccaaagaca gcctagagag gacggcaatg aagaagataa 180
agaaaaatcaa ggagatgaga cccaaggtca gncgccacct caacgtcggg accgccgcaa 240
cttcaattac cgacgcagac gccagaaaa ccctaaacca caagatggca aagagacaaa 300
agcagccgat ccaccag 317

<210> 381
<211> 392
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(392)
<223> n = A,T,C or G

<400> 381
cctgaaggaa gagctggcct acctgaatnn naaccatgag gaggaaatca gtacgctgag 60
gggccaagtg ggaggccagg tcagtgtgga ggtggattcc gctccgggca ccgatctcgc 120
caagatcctg agtgacatgc gaagccaata tgaggtcatt gccgagcaga accggaagga 180
tgctgaagcc tggttcacca gccggactga agaattgaac cgggaggtcg ctggccacac 240
ggagcagctc cagatgagca ggtccgaggt tactgacctg cggcgacccc ttcagggtct 300
tgagattgag ctgcagtcac agacctggc cgcgaccacg ctaagccgaa ttccagcaca 360
ctggcggccg ttactagtgg atccgagctc gg 392

<210> 382
<211> 234
<212> DNA
<213> Homo sapiens

<400> 382

```
nctcgatgtc taaatgagcg tggtaaagga tggtagcctgc tggggtctcg tagataacctc 60
gggacttcac tccaatgaay cgggtctcca cgatgtcaat acggcccacg ccatgcttgc 120
ccgcgacttc gttcaggtag atgaagagct ccaaggaggt ctgggtgggtg gtgccatcct 180
tgacgttggg cacccttcaca gggacccctt ttttgaactc catctccaga atgt 234
```

<210> 383

<211> 396

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(396)

<223> n = A,T,C or G

<400> 383

```
ccttgacctt ttcagcaagt gggaaaggtgt ttcccgcttc cacagacaag gccaggactc 60
gtttgnaccc gttgatgata gaatggggta ctgatgcaac agttgggtag ccaatctgca 120
gacagacact ggcaacattg cggacaccca ggatttcaat ggtgcccccg gagatttttag 180
tggtgatacc taaagcctgg aaaaaggagg tcttctcggg cccgagacca gtgttctggg 240
ctggcacagt gacttcacat ggggcaatgg caccagcacg ggcagcagac ctgcccgggc 300
ggccgctcga aagccgaatt ccagcacact ggcggccgtt actagtggat ccgagctcgg 360
taccagctt ggcgtaatca cggtcatagc tgtttc 396
```

<210> 384

<211> 396

<212> DNA

<213> Homo sapiens

<400> 384

```
gctgaatagg cacagagggc acctgtacac cttcagacca gtctgcaacc tcaggctgag 60
tagcagtga ctcaggagcg ggagcagtc cttcaccctg aaattcctcc ttggtaactg 120
ccttctcagc agcagcctgc tcttcttttt caatctcttc aggatctctg tagaagtaca 180
gatcaggcat gacctcccat ggggtgtcac gggaaatggg gccacgcacg ccgagaaatt 240
cccgagccag catccaccac atcaaaccca ctgagtgaac tcccttgttg ttgcatggga 300
tggcaatgtc cacatagcgc agaggagaa ctgtgttaca cagcgcaatg gtaggtaggt 360
taacataaga tgctccgtg agaggctggt ggtcac 396
```

<210> 385

<211> 2943

<212> DNA

<213> Homo sapiens

<400> 385

```
cagccaccgg agtggatgcc atctgcaccc accgcccga cccacaggc cctgggctgg 60
acagagagca gctgtatttg gagctgagcc agctgaccca cagcatcact gagctgggcc 120
cctacaccct ggacagggac agtctctatg tcaatgggtt cacacagcgg agctctgtgc 180
ccaccactag catctcctgg acccccacag tggacctggg aacatctggg actccagttt 240
ctaaacctgg tccctcggct gccagccctc tccctgggtt attcactctc aacttcacca 300
tcaccaacct gcggtatgag gagaacatgc agcacccctg ctccagggaag ttcaaacacca 360
cggagagggt ccttcagggc ctggctccctg ttcaagagca ccagtgttgg cctctgttac 420
tctggctgca gactgacttt gctcaggcct gaaaaggatg ggacagccac tggagtggat 480
gccatctgca cccaccaccc tgaccccaaa agccctaggc tggacagaga gcagctgtat 540
tgggagctga gccagctgac ccacaatatc actgagctgg gccctatgc cctggacaac 600
gacagcctct ttgtcaatgg tttcactcat cggagctctg tgtccaccac cagcactcct 660
```



```

gggaccccc  cagtgtatct  gggagcatct  aagactccag  cctcgatatt  tggcccttca  720
gctgccagcc  atctcctgat  actatcacc  ctcaacttca  ccataactaa  cctgcgggat  760
gaggagaaca  tgtggcctgg  ctccaggaa  ttcaacacta  cagagaggg  ccttcagggc  840
ctgctaaggc  ccttgttcaa  gaacaccagt  qttgccctc  tqtactctgg  ctgcaggctg  900
accttgcctc  ggccagagaa  agatggggaa  gccaccggag  tggatgccat  ctgcaccac  960
cgccctgacc  ccacaggccc  tgggctggac  agagagcagc  tqtatttga  gctgagccag  1020
ctgaccacac  gcatcactga  gctgggcccc  tacacactgg  acagggacag  tctctatgtc  1080
aatggtttca  cccatcgag  ctctgtaccc  accaccagca  ccgggggtgt  cagcaggag  1140
ccattcacac  tgaacttcac  catcaacaac  ctgcgctaca  tggcgacat  gggccacccc  1200
ggctccttca  agttcnaat  cacagacaac  gtcataagc  acctgctcag  tctttgttc  1260
cagaggagca  gcctgggtgc  acggtagaca  ggctgcaggg  tcatcgcact  aaggctctgt  1320
aagaacqgtg  ctgagacacg  ggtggacctc  ctctgcacct  acctgcagcc  cctcagcggc  1380
ccaggctctg  ctatcaagca  ggtgttccat  gagctgagcc  agcagaccca  tggcatcacc  1440
cggtcgggac  cctactctct  ggacaaagac  agcctctacc  ttaacgggta  caatgaacct  1500
ggtccagatg  agcctcctac  aactcnaag  ccagccacca  cattcctgcc  tctctgtca  1560
gaagccacaa  cagccatggg  gtaccacctg  aagacctca  cactcaactt  caccatctcc  1620
aatctccagt  attcaccaga  tatggcgaag  ggctcagcta  cattcaactc  caccgagggg  1680
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<210> 386

<211> 2608

<212> DNA

<213> Homo sapiens

<400> 386

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gttcaacact  acagagaggg  tcttccagg  cctgctaagg  ccttgttca  agaaccacag  480
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<210> 387

<211> 1761

<212> DNA

<213> Homo sapiens

<400> 387

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tggacataca gcagctttac tgggagctga gtcagctgac ccatgggtgc acccaactgc 660
gcttctatgt cctggacagg gatagcctct tcatcaatgg ctatgcaccc cagaatttat 720
caatccgggg caggtaccag ataaatttcc acattgtcaa ctggaacctc agtaattccag 780

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acccacatc ctcagagtac atcaccctgc tgagggacat ccaggacaag gtcaccacac 840
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ggacacaaaa aaaaaaaaaa a 1761

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<210> 388

<211> 772

<212> PRT

<213> Homo sapiens

<400> 388

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Asn Leu Val Pro Arg Leu Pro Ala Leu Ser Trp Cys Tyr Ser Leu Ser
      35              40              45

Thr Ser Pro Ser Pro Thr Cys Gly Met Arg Arg Thr Cys Ser Thr Leu
      50              55              60

Ala Pro Gly Ser Ser Thr Pro Arg Arg Gly Ser Phe Arg Ala Trp Ser
      65              70              75              80

Leu Phe Lys Ser Thr Ser Val Gly Pro Leu Tyr Ser Gly Cys Arg Leu
      85              90              95

Thr Leu Leu Arg Pro Glu Lys Asp Gly Thr Ala Thr Gly Val Asp Ala
      100             105             110

Ile Cys Thr His His Pro Asp Pro Lys Ser Pro Arg Leu Asp Arg Glu
      115             120             125

Gln Leu Tyr Trp Glu Leu Ser Gln Leu Thr His Asn Ile Thr Glu Leu
      130             135             140

Gly Pro Tyr Ala Leu Asp Asn Asp Ser Leu Phe Val Asn Gly Phe Thr
      145             150             155             160

His Arg Ser Ser Val Ser Thr Thr Ser Thr Pro Gly Thr Pro Thr Val

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Tyr	Leu	Gly	Ala	Ser	Lys	Thr	Pro	Ala	Ser	Ile	Phe	Gly	Pro	Ser	Ala						
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Ala	Ser	His	Leu	Leu	Ile	Leu	Phe	Thr	Leu	Asn	Phe	Thr	Ile	Thr	Asn						
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Ser	Val	Gly	Pro	Leu	Tyr	Ser	Gly	Cys	Arg	Leu	Thr	Leu	Leu	Arg	Pro						
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Glu	Lys	Asp	Gly	Glu	Ala	Thr	Gly	Val	Asp	Ala	Ile	Cys	Thr	His	Arg						
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Pro	Asp	Pro	Thr	Gly	Pro	Gly	Leu	Asp	Arg	Gln	Gln	Leu	Tyr	Leu	Glu						
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Asp	Arg	Asp	Ser	Leu	Tyr	Val	Asn	Gly	Phe	Thr	His	Arg	Ser	Ser	Val						
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Pro	Thr	Thr	Ser	Thr	Gly	Val	Val	Ser	Glu	Glu	Pro	Phe	Thr	Leu	Asn						
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Phe	Thr	Ile	Asn	Asn	Leu	Arg	Tyr	Met	Ala	Asp	Met	Gly	Gln	Pro	Gly						
		340						345					350								
Ser	Leu	Lys	Phe	Asn	Ile	Thr	Asp	Asn	Val	Met	Lys	His	Leu	Leu	Ser						
		355					360					365									
Pro	Leu	Phe	Gln	Arg	Ser	Ser	Leu	Gly	Ala	Arg	Tyr	Thr	Gly	Cys	Arg						
	370					375					380										
Val	Ile	Ala	Leu	Arg	Ser	Val	Lys	Asn	Gly	Ala	Glu	Thr	Arg	Val	Asp						
385					390					395					400						
Leu	Leu	Cys	Thr	Tyr	Leu	Gln	Pro	Leu	Ser	Gly	Pro	Gly	Leu	Pro	Ile						
			405						410					415							
Lys	Gln	Val	Phe	His	Glu	Leu	Ser	Gln	Gln	Thr	His	Gly	Ile	Thr	Arg						
		420						425					430								
Leu	Gly	Pro	Tyr	Ser	Leu	Asp	Lys	Asp	Ser	Leu	Tyr	Leu	Asn	Gly	Tyr						

Thr Phe Leu Pro Pro Leu Ser Glu Ala Thr Thr Ala Met Gly Tyr His
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 Leu Lys Thr Leu Thr Leu Asn Phe Thr Ile Ser Asn Leu Gln Tyr Ser
 485 490 495
 Pro Asp Met Gly Lys Gly Ser Ala Thr Phe Asn Ser Thr Glu Gly Val
 500 505 510
 Leu Gln His Leu Leu Arg Pro Leu Phe Gln Lys Ser Ser Met Gly Pro
 515 520 525
 Phe Tyr Leu Gly Cys Gln Leu Ile Ser Leu Arg Pro Glu Lys Asp Gly
 530 535 540
 Ala Ala Thr Gly Val Asp Thr Thr Cys Thr Tyr His Pro Asp Pro Val
 545 550 555 560
 Gly Pro Gly Leu Asp Ile Gln Gln Leu Tyr Trp Glu Leu Ser Gln Leu
 565 570 575
 Thr His Gly Val Thr Gln Leu Gly Phe Tyr Val Leu Asp Arg Asp Ser
 580 585 590
 Leu Phe Ile Asn Gly Tyr Ala Pro Gln Asn Leu Ser Ile Arg Gly Glu
 595 600 605
 Tyr Gln Ile Asn Phe His Ile Val Asn Trp Asn Leu Ser Asn Pro Asp
 610 615 620
 Pro Thr Ser Ser Glu Tyr Ile Thr Leu Leu Arg Asp Ile Gln Asp Lys
 625 630 635 640
 Val Thr Thr Leu Tyr Lys Gly Ser Gln Leu His Asp Thr Phe Arg Phe
 645 650 655
 Cys Leu Val Thr Asn Leu Thr Met Asp Ser Val Leu Val Thr Val Lys
 660 665 670
 Ala Leu Phe Ser Ser Asn Leu Asp Pro Ser Leu Val Glu Gln Val Phe
 675 680 685
 Leu Asp Lys Thr Leu Asn Ala Ser Phe His Trp Leu Gly Ser Thr Tyr
 690 695 700
 Gln Leu Val Asp Ile His Val Thr Glu Met Glu Ser Ser Val Tyr Gln
 705 710 715 720
 Pro Thr Ser Ser Ser Ser Thr Gln His Phe Tyr Leu Asn Phe Thr Ile
 725 730 735
 Thr Asn Leu Pro Tyr Ser Gln Asp Lys Ala Gln Pro Gly Thr Thr Asn
 740 745 750

Tyr Gln Arg Asn Lys Arg Asn Ile Glu Asp Ala Ala Pro His Arg Gly
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Gly Leu Pro Val
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<210> 389

<211> 833

<212> PRT

<213> Homo sapiens

<400> 389

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Leu Leu Arg Pro Glu Lys Asp Gly Thr Ala Thr Gly Val Asp Ala Ile
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Cys Thr His His Pro Asp Pro Lys Ser Pro Arg Leu Asp Arg Glu Gln
 35 40 45

Leu Tyr Trp Glu Leu Ser Gln Leu Thr His Asn Ile Thr Glu Leu Gly
 50 55 60

Pro Tyr Ala Leu Asp Asn Asp Ser Leu Phe Val Asn Gly Phe Thr His
 65 70 75 80

Arg Ser Ser Val Ser Thr Thr Ser Thr Pro Gly Thr Pro Thr Val Tyr
 85 90 95

Leu Gly Ala Ser Lys Thr Pro Ala Ser Ile Phe Gly Pro Ser Ala Ala
 100 105 110

Ser His Leu Leu Ile Leu Phe Thr Leu Asn Phe Thr Ile Thr Asn Leu
 115 120 125

Arg Tyr Glu Glu Asn Met Trp Pro Gly Ser Arg Lys Phe Asn Thr Thr
 130 135 140

Glu Arg Val Leu Gln Gly Leu Leu Arg Pro Leu Phe Lys Asn Thr Ser
 145 150 155 160

Val Gly Pro Leu Tyr Ser Gly Cys Arg Leu Thr Leu Leu Arg Pro Glu
 165 170 175

Lys Asp Gly Glu Ala Thr Gly Val Asp Ala Ile Cys Thr His Arg Pro
 180 185 190

Asp Pro Thr Gly Pro Gly Leu Asp Arg Glu Gln Leu Tyr Leu Glu Leu
 195 200 205

Ser Gln Leu Thr His Ser Ile Thr Glu Leu Gly Pro Tyr Thr Leu Asp
 210 215 220

Arg Asp Ser Leu Tyr Val Asn Gly Phe Thr His Arg Ser Ser Val Pro
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 Thr Thr Ser Thr Gly Val Val Ser Glu Glu Pro Phe Thr Leu Asn Phe
 245 250 255
 Thr Ile Asn Asn Leu Arg Tyr Met Ala Asp Met Gly Gln Pro Gly Ser
 260 265 270
 Leu Lys Phe Asn Ile Thr Asp Asn Val Met Lys His Leu Leu Ser Pro
 275 280 285
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 Ile Ala Leu Arg Ser Val Lys Asn Gly Ala Glu Thr Arg Val Asp Leu
 305 310 315 320
 Leu Cys Thr Tyr Leu Gln Pro Leu Ser Gly Pro Gly Leu Pro Ile Lys
 325 330 335
 Gln Val Phe His Glu Leu Ser Gln Gln Thr His Gly Ile Thr Arg Leu
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 Gly Pro Tyr Ser Leu Asp Lys Asp Ser Leu Tyr Leu Asn Gly Tyr Asn
 355 360 365
 Glu Pro Gly Pro Asp Glu Pro Pro Thr Thr Pro Lys Pro Ala Thr Thr
 370 375 380
 Phe Leu Pro Pro Leu Ser Glu Ala Thr Thr Ala Met Gly Tyr His Leu
 385 390 395 400
 Lys Thr Leu Thr Leu Asn Phe Thr Ile Ser Asn Leu Gln Tyr Ser Pro
 405 410 415
 Asp Met Gly Lys Gly Ser Ala Thr Phe Asn Ser Thr Glu Gly Val Leu
 420 425 430
 Gln His Leu Leu Arg Pro Leu Phe Gln Lys Ser Ser Met Gly Pro Phe
 435 440 445
 Tyr Leu Gly Cys Gln Leu Ile Ser Leu Arg Pro Glu Lys Asp Gly Ala
 450 455 460
 Ala Thr Gly Val Asp Thr Thr Cys Thr Tyr His Pro Asp Pro Val Gly
 465 470 475 480
 Pro Gly Leu Asp Ile Gln Gln Leu Tyr Trp Glu Leu Ser Gln Leu Thr
 485 490 495
 His Gly Val Thr Gln Leu Gly Phe Tyr Val Leu Asp Arg Asp Ser Leu
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 Phe Ile Asn Gly Tyr Ala Pro Gln Asn Leu Ser Ile Arg Gly Glu Tyr

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Thr Ser Ser Glu Tyr Ile Thr Leu Leu Arg Asp Ile Gln Asp Lys Val		
545	550	555
Thr Thr Leu Tyr Lys Gly Ser Gln Leu His Asp Thr Phe Arg Phe Cys		
565	570	575
Leu Val Thr Asn Leu Thr Met Asp Ser Val Leu Val Thr Val Lys Ala		
580	585	590
Leu Phe Ser Ser Asn Leu Asp Pro Ser Leu Val Glu Gln Val Phe Leu		
595	600	605
Asp Lys Thr Leu Asn Ala Ser Phe His Trp Leu Gly Ser Thr Tyr Gln		
610	615	620
Leu Val Asp Ile His Val Thr Glu Met Glu Ser Ser Val Tyr Gln Pro		
625	630	635
Thr Ser Ser Ser Ser Thr Gln His Phe Tyr Leu Asn Phe Thr Ile Thr		
645	650	655
Asn Leu Pro Tyr Ser Gln Asp Lys Ala Gln Pro Gly Thr Thr Asn Tyr		
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Gln Arg Asn Lys Arg Asn Ile Glu Asp Ala Leu Asn Gln Leu Phe Arg		
675	680	685
Asn Ser Ser Ile Lys Ser Tyr Phe Ser Asp Cys Gln Val Ser Thr Phe		
690	695	700
Arg Ser Val Pro Asn Arg His His Thr Gly Val Asp Ser Leu Cys Asn		
705	710	715
Phe Ser Pro Leu Ala Arg Arg Val Asp Arg Val Ala Ile Tyr Glu Glu		
725	730	735
Phe Leu Arg Met Thr Arg Asn Gly Thr Gln Leu Gln Asn Phe Thr Leu		
740	745	750
Asp Arg Ser Ser Val Leu Val Asp Gly Tyr Phe Pro Asn Arg Asn Glu		
755	760	765
Pro Leu Thr Gly Asn Ser Asp Leu Pro Phe Trp Ala Val Ile Leu Ile		
770	775	780
Gly Leu Ala Gly Leu Leu Gly Leu Ile Thr Cys Leu Ile Cys Gly Val		
785	790	795
Leu Val Thr Thr Arg Arg Arg Lys Lys Glu Gly Glu Tyr Asn Val Gln		
805	810	815

Gln Gln Cys Pro Gly Tyr Tyr Gln Ser His Leu Asp Leu Glu Asp Leu
 820 825 830

Gln

<210> 390
 <211> 438
 <212> PRT
 <213> Homo sapiens

<400> 390
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 35 40 45

Ser Met Gly Pro Phe Tyr Leu Gly Cys Gln Leu Ile Ser Leu Arg Pro
 50 55 60

Glu Lys Asp Gly Ala Ala Thr Gly Val Asp Thr Thr Cys Thr Tyr His
 65 70 75 80

Pro Asp Pro Val Gly Pro Gly Leu Asp Ile Gln Gln Leu Tyr Trp Glu
 85 90 95

Leu Ser Gln Leu Thr His Gly Val Thr Gln Leu Gly Phe Tyr Val Leu
 100 105 110

Asp Arg Asp Ser Leu Phe Ile Asn Gly Tyr Ala Pro Gln Asn Leu Ser
 115 120 125

Ile Arg Gly Glu Tyr Gln Ile Asn Phe His Ile Val Asn Trp Asn Leu
 130 135 140

Ser Asn Pro Asp Pro Thr Ser Ser Glu Tyr Ile Thr Leu Leu Arg Asp
 145 150 155 160

Ile Gln Asp Lys Val Thr Thr Leu Tyr Lys Gly Ser Gln Leu His Asp
 165 170 175

Thr Phe Arg Phe Cys Leu Val Thr Asn Leu Thr Met Asp Ser Val Leu
 180 185 190

Val Thr Val Lys Ala Leu Phe Ser Ser Asn Leu Asp Pro Ser Leu Val
 195 200 205

Glu Gln Val Phe Leu Asp Lys Thr Leu Asn Ala Ser Phe His Trp Leu
 210 215 220

Gly Ser Thr Tyr Gln Leu Val Asp Ile His Val Thr Glu Met Glu Ser
 225 230 235 240
 Ser Val Tyr Gln Pro Thr Ser Ser Ser Ser Thr Gln His Phe Tyr Leu
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 Asn Phe Thr Ile Thr Asn Leu Pro Tyr Ser Gln Asp Lys Ala Gln Pro
 260 265 270
 Gly Thr Thr Asn Tyr Gln Arg Asn Lys Arg Asn Ile Glu Asp Ala Leu
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 290 295 300
 Gln Val Ser Thr Phe Arg Ser Val Pro Asn Arg His His Thr Gly Val
 305 310 315 320
 Asp Ser Leu Cys Asn Phe Ser Pro Leu Ala Arg Arg Val Asp Arg Val
 325 330 335
 Ala Ile Tyr Glu Glu Phe Leu Arg Met Thr Arg Asn Gly Thr Gln Leu
 340 345 350
 Gln Asn Phe Thr Leu Asp Arg Ser Ser Val Leu Val Asp Gly Tyr Phe
 355 360 365
 Pro Asn Arg Asn Glu Pro Leu Thr Gly Asn Ser Asp Leu Pro Phe Trp
 370 375 380
 Ala Val Ile Leu Ile Gly Leu Ala Gly Leu Leu Gly Leu Ile Thr Cys
 385 390 395 400
 Leu Ile Cys Gly Val Leu Val Thr Thr Arg Arg Arg Lys Lys Glu Gly
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 Glu Tyr Asn Val Gln Gln Gln Cys Pro Gly Tyr Tyr Gln Ser His Leu
 420 425 430
 Asp Leu Glu Asp Leu Gln
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<210> 391

<211> 2627

<212> DNA

<213> Homo sapiens

<400> 391

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 gagacactcc atcacagtca ctactgtcgc ctcagctggg aacattgggg aggatggaat 240
 cctgagctgc acttttgaac ctgacatcaa actttctgat atcgtgatac aatggctgaa 300
 ggaaggtgtt ttaggcttgg tccatgagtt caaagaaggc aaagatgagc tgtcggagca 360

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caaggacaat gactgcttga attgaggcct tgagggaatga agctttgaag gaaaagaata 2460
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ggagccacgg tgactgtatt acatgttgtt atagaaaact gatttttagag ttctgatcgt 2580
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<210> 392

<211> 310

<212> PRT

<213> Homo sapiens

<400> 392

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His Ala Ser Ala His Ala Ser Gly Arg Gln Arg Gln Leu His Ser Ala
          5                      10                      15

```

```

Ser Thr Gln Ile Arg Trp Glu Pro Ser Pro Ala Met Ala Ser Leu Gly
          20                      25                      30

```

```

Gln Ile Leu Phe Trp Ser Ile Ile Ser Ile Ile Ile Ile Leu Ala Gly
          35                      40                      45

```

```

Ala Ile Ala Leu Ile Ile Gly Phe Gly Ile Ser Gly Arg His Ser Ile

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50 55 60
 Thr Val Thr Thr Val Ala Ser Ala Gly Asn Ile Gly Glu Asp Gly Ile
 65 70 75 80
 Leu Ser Cys Thr Phe Glu Pro Asp Ile Lys Leu Ser Asp Ile Val Ile
 85 90 95
 Gln Trp Leu Lys Glu Gly Val Leu Gly Leu Val His Glu Phe Lys Glu
 100 105 110
 Gly Lys Asp Glu Leu Ser Glu Gln Asp Glu Met Phe Arg Gly Arg Thr
 115 120 125
 Ala Val Phe Ala Asp Gln Val Ile Val Gly Asn Ala Ser Leu Arg Leu
 130 135 140
 Lys Asn Val Gln Leu Thr Asp Ala Gly Thr Tyr Lys Cys Tyr Ile Ile
 145 150 155 160
 Thr Ser Lys Gly Lys Gly Asn Ala Asn Leu Glu Tyr Lys Thr Gly Ala
 165 170 175
 Phe Ser Met Pro Glu Val Asn Val Asp Tyr Asn Ala Ser Ser Glu Thr
 180 185 190
 Leu Arg Cys Glu Ala Pro Arg Trp Phe Pro Gln Pro Thr Val Val Trp
 195 200 205
 Ala Ser Gln Val Asp Gln Gly Ala Asn Phe Ser Glu Val Ser Asn Thr
 210 215 220
 Ser Phe Glu Leu Asn Ser Glu Asn Val Thr Met Lys Val Val Ser Val
 225 230 235 240
 Leu Tyr Asn Val Thr Ile Asn Asn Thr Tyr Ser Cys Met Ile Glu Asn
 245 250 255
 Asp Ile Ala Lys Ala Thr Gly Asp Ile Lys Val Thr Glu Ser Glu Ile
 260 265 270
 Lys Arg Arg Ser His Leu Gln Leu Leu Asn Ser Lys Ala Ser Leu Cys
 275 280 285
 Val Ser Ser Phe Phe Ala Ile Ser Trp Ala Leu Leu Pro Leu Ser Pro
 290 295 300
 Tyr Leu Met Leu Lys
 305

<210> 393

<211> 283

<212> PRT

<213> Homo sapiens

<400> 393

Met Ala Ser Leu Gly Gln Ile Leu Phe Trp Ser Ile Ile Ser Ile Ile
 5 10 15
 Ile Ile Leu Ala Gly Ala Ile Ala Leu Ile Ile Gly Phe Gly Ile Ser
 20 25 30
 Gly Arg His Ser Ile Thr Val Thr Thr Val Ala Ser Ala Gly Asn Ile
 35 40 45
 Gly Glu Asp Gly Ile Leu Ser Cys Thr Phe Glu Pro Asp Ile Lys Leu
 50 55 60
 Ser Asp Ile Val Ile Gln Trp Leu Lys Glu Gly Val Leu Gly Leu Val
 65 70 75 80
 His Glu Phe Lys Glu Gly Lys Asp Glu Leu Ser Glu Gln Asp Glu Met
 85 90 95
 Phe Arg Gly Arg Thr Ala Val Phe Ala Asp Gln Val Ile Val Gly Asn
 100 105 110
 Ala Ser Leu Arg Leu Lys Asn Val Gln Leu Thr Asp Ala Gly Thr Tyr
 115 120 125
 Lys Cys Tyr Ile Ile Thr Ser Lys Gly Lys Gly Asn Ala Asn Leu Glu
 130 135 140
 Tyr Lys Thr Gly Ala Phe Ser Met Pro Glu Val Asn Val Asp Tyr Asn
 145 150 155 160
 Ala Ser Ser Glu Thr Leu Arg Cys Glu Ala Pro Arg Trp Phe Pro Gln
 165 170 175
 Pro Thr Val Val Trp Ala Ser Gln Val Asp Gln Gly Ala Asn Phe Ser
 180 185 190
 Glu Val Ser Asn Thr Ser Phe Glu Leu Asn Ser Glu Asn Val Thr Met
 195 200 205
 Lys Val Val Ser Val Leu Tyr Asn Val Thr Ile Asn Asn Thr Tyr Ser
 210 215 220
 Cys Met Ile Glu Asn Asp Ile Ala Lys Ala Thr Gly Asp Ile Lys Val
 225 230 235 240
 Thr Glu Ser Glu Ile Lys Arg Arg Ser His Leu Gln Leu Leu Asn Ser
 245 250 255
 Lys Ala Ser Leu Cys Val Ser Ser Phe Phe Ala Ile Ser Trp Ala Leu
 260 265 270
 Leu Pro Leu Ser Pro Tyr Leu Met Leu Lys
 275 280

11729.1 contg

TTAGAGAGCCACAGAAGGAAGAAAGAGTTAAAAGCAGCAAAGCCGGGTTTTTTGTITTTGT
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CAAGTAGCTGGGATTACAGGCGCCCCCACCACGCTCAGCTAATTTTTTTGTATTTTAGT
AGAGACAGGGTTTACCAGGTTGGCCAGGCTGCTCTTGAACCTCTGACCTCAGGTGATCCA
CCCGCCTCGGCCTCCCAAAGTGCTGGGATTACAGGCGTGAGCCACCACGCCCCGGCCCCAA
AGCTGTTTCTTTTGTCTTTAGCCTAAAGCTCTCCTGCCATGCAGTATCTACATAACTGACGT
GACTGCCAGCAAGCTCAGTCACTCCGTGGTC

11729-45.21.21.cons1

TAGGATGTGTTGGACCCTCTGTGTCAAAAAAACCTCACAAAGAAATCCCTGCTCATTACA
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TGACTAAAAACCAACAATAATCTTACTATGTGAGTGAGGATCTGAAGGATAAGAAAG
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11729-45.21.21.cons2

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TTTGTITTTGTITTTGTITTTGAGATGGAGTCTCACTCTGTTGCCCAAGCTGGAGTACAACGGCA
TGATCTCAGCTCGCTGCAACCTCCGGCTCCCAAGTTCAAGTGATTCTCCTGCCTCAGCCTCC
CAAGTAGCTGGGATTACAGGCGCCCCCACCACGCTCAGCTAATTTTTTTGTATTTTAGT
AGAGACAGGGTTTACCAGGTTGGCCAGGCTGCTCTTGAACCTCTGACCTCAGGTGATCCA
CCCGCCTCGGCCTCCCAAAGTGCTGGGATTACAGGCGTGAGCCACCACGCCCCGGCCCCAA
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GACTGCCAGCAAGCTCAGTCACTCCGTGGTC

11731.1contig

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CTGCTGCTGATTATAGCTTTCTCTGAGTTCCTTCAAGTGAATTGTTAAATGAATCCATTTCTG
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TCTTCCTTTCTGATGACTTTTATGAAGTAACTGATCCCTGAATCAGGTGTGTTACTGAG
CTGCATCTTTTAAATTTCTTTTAAATAGCTGCTTCTCAGCGACCAGATAGATAAGCTTAT
TTTGATATTCCTTAAGCTCTTGTGAAGTTGTTTCAATTTCCATAAATTTCCAGGTACACTGT
TTATCCAAAACCTCTAGCTCAGTCTTTTGTGTTTCTGATTTGGACATCTTGAGTCTG
CCTGAGATCTGCTGATGKTTTCCATTCACTGCTTCCAGTTCCAGGTGGACACTTTCCTTCT
GGAGCTCAGCCTGACAATGCCCTTCTTGKTCCT

FIG. 1A

11731.2contig

AGCCAGATGGCTGAGAGCTGCAAGAAGAAGTCAGGATCATGATGGCTCAGTTTCCACAG
CGATGAATGGAGGGGCAATAATGTGGGCTATTACATCTGAAGAAGCTACTAAGCATGATA
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TTTCTACAGTCAGGTCTGCCGGCCCCGGTTTTAGCTGAAATATGGGCCTTATCAGATCTG
AACAAAGGATGGGAAGATGCCAGCAGCAAGAGTTCTCTATAGCTATGAACTCATCAAGTTA
AAGTTGCAGGGCCAAACAGCTGCTGTAGTCTCTCTCTATCATGAAACAACCCCTATGT
TCTCTCCACTAATCTCTGCTCGTTTTGGGAAGGAAAGCATGCCAATCTGTCCATTCAACAG
CCATTGCTCCAGTTGCACCTATAGCAACACCTTGTCTTCTGCTACTTCAGGGACCAGTAT
TCCTCCCTAATGATGCCTGCTCCCTAGTGCTTCTGTAGTA

11734.1contig

AATAGATTTAATGCAGAGTGTCAACTTCAAITGATTGATAGTGGCTGCCTAGAGTGCTGTG
TTGAGTAGGTTTCTGAGGATGCACCCTGGCTTGAAGAGAAAGACTGGCAGGATTAACAAT
ATCTAAAATCTCACTTGTAGGAGAAACACAGGCACCAGAGCTGCCACTGGTGCTGGCAC
CAGCTCCACCAGGCCAGCGAAGAGCCCAATGTGAGAGTGGCGGTACAGGCTGGCACCAG
CACTGAAGCCACCAGCTGGTGCTGGCACTGGCACTGGCACTGTTATTGGTACTGGTACTGCC
ACCACTGCTGGCACTGCCACTCTTTGGGCTTTGGCTTACGTTCTGCTCCCGCTGGATCC
GGGCTTTGGCCAGGGTCCGATATCAGCTTCGTCCGAGTTGCCAGGGCCCGGCAGCATTCTC
CGAGCCGAGCCCAATGCCCAATCGAGCTCTAATCTGGCCCTAGCCCTTGGCTTCAGCTGCA
GCCTCAGCTGCAGCTTCAAAATCCGCTTCCAAGCCCTCTCGCTAC

11734.2contig

CCCAAGAAAGCCCGAAAGCTGAAGCATCTGCATGGCGAAGAGGATGGCAGCAGTCATCA
GAGTCAGGCTTCTGGAACACAGGTGGCCGAAGGGTCTCAAAGGCCCTAATGGCTCAAT
GGCCCGCAGGGCTTCAAAGGGTCCCATAGCCCTTTGGGCCCGCAGGGCATCAAGGACTCG
GTTGCTGCTTGGGCCCGCAGAGCCCTTCTCTGCTGAGATCACCTAAAGCCCGTAGGGCC
AAGCCTGCGCGTAGAGCTGCCAAGCTCAGTCATCCCAAGAGCCCTGAAGCACCACCCT
CGGGATCTGCCCTTTTGCAGGGAGCCCAATCAATTGGTGAAGTACCTTTTGGCTAAAG
ACCAGACGAAGATTCCCATCAAGCCCTGGACATGCTGAAGGACATCATCAAGAAATACA
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TCAAATTGAAGGAAATTCATAAGAAATGACCCTTGTACATTCTCTCAGC

11736.1contig

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CAACAGGACCTTGTATAAATTCCTGATAAGAGAAATAGTCTCTGGGTGTTTGTCTTAAT
TGATAAAAATTAATGTGCTATCTTTACTTCAGAAATCAGAAAAT

FIG. 1B

11736.2contig

AAGCGGAAATGAGAAAGGAGGGAATAATCATGTGGTATTGAGCGGAAACTGCTGGATGA
CAGGGCTCAGTCCTGTTGGAGAACTCTGGGTGCTGCTGTAGAACAGGGCCACTCACAGTG
GGGTGCACAGACCAGCACGGCTCTGTGACCTGTTTGTACAGGTCCATGATGAGGTAAAC
AATACACTGAGTATAAGGGTTGGTTAGAACTCTTACACCAATTTGACAAAGTAATCTTC
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GTTCTGAGTTACCTATTTTTATTGCATTTTACAAAAGCATCCTTCCATGAAGGACCGGAAAGT
TAAAAACAAGCAGGTCCTTTATCACAGCACTGTGCTAGAACACAGTTACAGGTTATCCAC
CCAAGGAGCCAGGGACCTGGGCTAAACC.AAAGAAATTTGCTTTTGGTTAATCATCAGGTA
CTTGAGTTGGAATTGTTTTAATCCCATCATTACCAAGGCTGGAXGTG

11739-1&2

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GAGACATTC.AAGCAAAGGTTGGACAACTACTTTTCCAGAACAGAAAGGAACTCATGCA
CAGAAAAGGTGACTAATAAAGGTACCAGAAAGTAATGGCTGCACAAATACCAGAACTGTA
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TTGGACTGTGTTAGAGACTTCACAAACAGAGAAAGTAAAACTGAAAGAGACCACCTGTTCA
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GACTGTTTGGCAAATGCCAAACCGCTGGAGAAACAAAATTGCTATTTACCAGGAATAATCA
CAATAGAACGCTTATTTCTCACTGAAATAATAAGATGCAACATTTGTTGAGGCCCTTATGA
TTCAGCAGCTTGCTTACTTGATTAGAAAAATAAACCATTGTTTCTTCAATTGTGACTGTTA
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TAAAAATAAATGGA

11740.1.contig

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TGAAGCTAGCAAGTGATGATATGATAAAATAAAGCTGGAGCAAAATAAAACACAAGACTT
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AAAGCGTTCCCTGATCTTCTGTTGTTCTCCATTTCAATAAGGAGGCATATCACATCCCAAGA
GTAATCAGAAAAAGAAAAAGACATTTTTCATTTTGAGATGAACCAAGACACAAAAACAA
AACGAACAAGTGTCTATGTCTAAATCTAGCCCTCTGAAATAAACCTTCAACATCTCTACAA
GGCAGCCTGATTTTGTAAATCTA.AACTGAAGAAATGTGATGACTTTTCTGACATGAAAA
TCAGATGAGAAAACTGTGCTCTTTCCAAAGCCTGAACCTCCCTGAAACCTTTTGCA

FIG. 1C

11766.1.contig

CTGGGATCAATTTCTCTTGATGTCATAAAAGACTCTTCTTCTTCTTCATCCTCTTCTTCAT
CCTCTTCTGTACAGTGCTGCCGGGTACAAAGGCTATCTTTGTCTTTATCCTGAGATGAAGAT
GATGCTTCTGTTTCTCCTACCATAACTGAAGAAATTCGCTGGAAGTCGTTTGACTGGCTGT
TTCTCTGACTTCACCTTCTTTGTCAAACCTGAGTCTTTTACCTCATGCCCTCAGCTTCCAC
AGCATCTTCACTCTGGATGTTTATTTTCAAAGGGCTCACTGAGGAACTTCTGATTCAGAG
GTGGAAGAGTCACTGTGATTTTCTCTCTCATTTTGTGCAAAATTTGCCCTTTTGTGTCTGT
GCTCTCAGGCAACCCATTTGTTGTCAATGGGGGCTGACAAAGAAACCTTTGGTTCGATTAAGT
GGCCTGGGTGTCCAGGCCCATTTATATTAGACCTCTCAGTATAGCTTGGTGAATTTCCAG
GAAACATAACACCAATTCATTTCGATTTAACTATTGGAATTTGGTTTT

11766.2.contig

GAGGGTTGGTGGTAGCGGCTTGGGGAGGTGCTCGCTCTGTGGGTCTTGTCTCTCGCACGG
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GGAGGGGAGGCTGTGAGGGACTCCGGCAAGCCATGGACGTGAGAGCCCTCCAGGAGGC
GCTGAAAGATTTTCAGAAAGAGGGGCAAAAAGGAAGTTTGTCTGTCTGGAATCAGTTTCT
TTGTCAATGATGCCAAGACTGGACAAACAATGATTCAGTGGTCCCAATTTAAAGGCTATTTT
ATTTTCAAACCTGGAGAAAGTGAATCCATGATTTTCAGAACTTCAGCTCCTGAGCCAAGAGGT
CTCCCAACCCATAATGTGCA

11773.2.contig

AAGCAGGGGGGTCCCGGCTCCAGGGGGGTCCCACTGCCCCGGCCGGCTCGCTCGCT
CGCCCCGGCGCGCGCTGCGGACCGGAGCATGCTCCCGACAGTGGGCTGCCCGCGCT
GCCGXTGCCG

11775-1&2

ATCTCTTGATGCCAAATAATTAATAAAATCTTTGAACAAGTTCAATGAATAAATAA
CAAAGTTTGCAAAAACGTGAAGATAACTTAATTTGTCAAAATTCCTCATTCGCCCAAAATC
ACTATTTTATTTTCTATGCAAAAGTATGCTTCAAACTGCTTAAATGATATATGATATG
ATACACAACCCAGTTTCAAATAGTAAAGCCAGTCACTTTGCAATTTGTAAGAAATAGGTA
AAAGATATAAGACACCTTACACACACACACACACACACAGTGTGCACGCCAATGAC
AAAAAACAATTTGGCTCTCTTAAATAAGAACATGAAGACCCCTTAATTTGCTGCCAGGAG
GGAACACTGTGTACCCCTCCTTACAAATCCAGTACTTTCTTTAATCCAATAGCAATCT
GGGCATATTTGAGAGGACTGATTTCTGACAGCCACGTTCAAAATCTGTGGGGAACCATTCAT
GTCCACCCACTCGTCCCTGAAAAATGCCAATAATTTTCCTCCCACTTCTGCTGCTGCTC
TCTTCCACATCCTCACATAGACCCGAGCCCTGCGCCCTGGCTGGGCATCGCATTTGCTG
GTAGAGCAAGTCAATGGTCTCTCTTTGACGTCAAGAACCGATACACCAAAATTCCTGGT
CGGTCAATTTGCATAACCAGACA

FIG. 1D

11777.1&2.cons

CAGACGGGGTTC.ACTATGTTGGCTAGGCTGGTCTTGAACCTCCTGACTTCAGGTGATCTGC
 CTGCTTGGCCCTCCC.AAAGTGCTGGGATTACAGGCATAAGCCACTGCGCCCGGCTGATCTG
 ATGGTTTCATA.AAGGCTTTTCCCCCTTTTGGTCAGCACTTCTCCTTCTGCGGCCATGTGAAG
 AAGGACATGTTTGGCTTCCCCTTCCACCACGAITGTAAGTTGTTTCTGAGGCCTCCCCGGCC
 ATGCTGAACCTGTGAGTCAATTAAACCTCTTTCCTTTATAAATTATCCAGTTTGGGTATGTC
 TTTATTAGTAGAATGAGAACAGACTAATACAACCTTAAAGGAGACTGACGGAGAGGATT
 CTTCCTGGATCCCAGCACTTCTCTGAATGCTACTGACATTCTTCTTGAGGACTTTAAACTG
 GGAGATAGAAAACAGATTCCATGGCTCAGCAGCCTGAGAGCAGGGAGGGAGCCAAAGCTA
 TAGATGACATGGGCAGCCTCCCCTGAGGCCAGGTGTGGCCGAACCTGGGCAGTGTCTGC=AC
 CCACCCACCCAGGGCCAAAGTCTGTCTTGGAGAGCCAAGCCTCAATCACTGCTAGCCTCA
 AGTGTCCCCAAGCCACAGTGGCTAGGGGGACTCAGGGAAACAGTCCCAGTCTGCCCTACTT
 CTCTTACCTTTACCCCTCATACCTCCAAAGTAGACCATGTTTCATGAGGTCCAAAGG

11779.2.contig

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 GAACCGGAAGAACAGGAGCGGAAGCTCCAGGCTGAAAGGGACAAAGCGAATGGAGAGG
 AGCAGCTGGCCCGGGAGGCTGAAACCGCGGCTGAACGTGAGGCGAGGCGCGGAGACGG
 GAGGAGCAGGAGGCTCGACAGAAAGCGCCAGGCTGAGCAGGAGGAGGACAGAGCCACTGCA
 GAAGCAGAAAGAGGAAGCGGAAGCTCGGTCGCGGGAAGAAGCTGAGCGCCAGCGCCAGG
 AGCGCGAAAAGCACTTTTACAGAAAGGAGGAACAGGAGAGACAAGAGCGAAGAAAGCGGCTG
 GAGGAGATAATGAAAGGCACTCGGAAATCAGAAAGCGCGCGAAGCAAGAAAGCAGGATGC
 AAAGGAGACCCAGCTAAGCAATTCGCGCCAGAGCCTTGTGAAAAGCTGTAGAGACTCGGC
 CCTCTGGGCTTCCAGAAAGCAATCTATTGCGAGAAAGGAAGGAGCTXGGCCCCCAAGGA

11781 & 37.cons

CTCTGTGGAAAACCTGATGAGGAATCAATTTACCAATTACCCATGTTCTCATCCCCAAGCAAA
 GTGCTGGGCTGTGATTACTGCAACACAGACAACGAAGAAGAACTTTTCTCATACAGGATC
 AGCAGGGGCTCATCACACTGGGCTGGATTCACTACCCACACAGAGCGGCTTTCTCTC
 CAGTGTCCACCTACACACTCACTCCTTTACCAGATGATGTTGGCAGAGTCAGTAGCCATT
 GTTTGCTCCCCAAGTTCCAGCAAACTGGATTCTTTAAACTAACTGACCATGGACTAGAGG
 AGATTTCTTCTGTGCGCCAGAAAGCAATTTCAACACACACCAAGGATCCACCTCTGTTCTG
 TAGCTGCAGCCAGCTGACTGTTGTGGACAGAGCAGTGACCATCACAGACCTTCGATGAGC
 GTTTGAGTCCAAACCTTCCAAAGCAACAAACCAATATCAGTGTACTGTAGCCCTTAAT
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 GAAAGAGCTGATTTTGTATTTACGGTTTGAAGAAATAACTGAACATATTTTTAGGCAA
 GTCAGAAAGACAACATGGTACCCAAACCAACTGTAACTCAGAAATTAAGTTACTCAGA
 AATTAGTAGCTCAGAAATTAAGAAAGAAATGGTATAATGAACCCCATATACCTTCTCTTC
 TGGATTACCAATTTGTAACATTTTCTCTCACTATCCTTCTAAATTTCTCTCTAAATTC
 AAATTTGTTATATTTACCTGTGGGCTCAATAAGGGCATCTGTCCAGAAATTTGGAAAGCCAT
 TTAGAAAATCTTTTGGATTTTCTGTGGTTTATGGCAATATGAATGGAGCTTATTACTGGG
 GTGAGGGACAGCTTACTCCATTGACCAAGTTGTTGGCTAACACATCCCGAAGAATGATT
 TTGTCAGGAATTAATGTTATTAATAAATAATTCAGGATATTTTCTCTACAATAAAGTAA
 CAAT

FIG. 1E

11781-76-87-J7

CTCTGTGGAAAACCTGATGAGGAATGAATTTACCATACCCATGTTCTCATCCCCAAGCAAA
GTGCTGGGTCTGATTACTGCAACACAGAGAACGAAGAAGAACTTTTCCTCATACAGGATC
AGCAGGGGCTCATCAGCTGGGCTGGATTATCTCAGCCACACAGACCGGCTTTCTCTC
CAGTGTGCGACCTACACACTGCTGCTTACCAGATGATGTTGCCAGAGTCAGTAGCCATT
GTTTGCTCCCCAAGTTCAGGAACTGGATTCTTTAACTAACTGACCATGGACTAGAGG
AGATTTCCTCTGTCGCCAGAAAGGATTTCCACACAGCAAGGATCCACCTCTGTTCTG
TAGCTGCAGCCACGTGACTGTTGTGGACAGAGCAGTGACCATCACAGACCTTCGATGAGC
GTTTGAGTCCAAACACCTTCCAAGAACAAACAAAACCATATCAGTGTACTGTAGCCCTTAAT
TTAAGCTTTCTAGAAAGCTTTGGAAGTTTTGTAGATAGTAGAAAGGGGGCATCACCTGA
GAAAGAGCTGATTTTGTATTTAGGTTTTGAAAAGAAATAACTGAACATATTTTTAGGCAA
GTCAGAAAGAGAACATCGTCACCCAAAAGCAACTGTAACTCAGAAATTAAGTTACTCAGA
AATTAAGTAGCTCAGAAATTAAGAAAGAAATGGTATAATGAACCCCATATACCTTTCCTTC
TGGATTCCCAATTGTTAACTTTTTCTCTCAGCTATCCTTCTAATTTCTCTCTAATTTT
AATTTGTTTATTTTACCTCTGGGCTCAATAAGGGCATCTGTCCAGAAATTTGGAAGCCAT
TTAGAAATCTTTTGGATTTTCTGTGTTTATGGCAATATGAATGGAGCTTATTACTGGG
GTGAGGGGACAGCTTACTCCATTTGACCAGATTGTTTGGCTAACACATCCCGAAGAAATGATT
TTGTACGGAATTAATTGTTATTTAATAAATAATTCAGGATATTTTCTCTACAATAAAGTAA
CAATTA

11784-1 & 2

GGACGACAAGGGCATGGCGATA TCCGATCCGAAATCAACCCCTTTGGAATTAATAAACCT
GGAACAGGGAAGGTGAAAGTTGCACTGACATGTCTTCCATATCTATACCTTTGTGCACAGT
TGAATGGGAAGCTGTTTGGCTTAGGGCATCTTAGAGTTGATTGATGGAAAAAGCAGACAG
GAACTGCTGGGAGGTCAAGTGGGCAAGTTGGTGAATGTGGAATAACTTACCTTTGTGCTC
CACTAAACCAGATGTGTTCCAGCTTTCTGACATGCAAGGATCTACTTTAATTCACACT
CTCATTAATAAATTGAATAAAAAGGGAATGTTTTGCCACCTGATATAATCTGCCAGGCTATG
TGACAGTAGCAAGGAATGGTTTCCGCTAAACAGCCCAATGCACTGGTCTGACTTTATAAAT
TATTAATAAATAAGAACTATTATC

11785.2.contig

GGCAGTCACATTCACCATCA TGGGAACACAGCTTCCCTTTCTTCAGGATTCTCTGTAGTGG
AAGAGAGCAGCCAGTGTTCGGCTGAAACATCTGAAAGTAGGGAGAAGAACCTAAAAATA
ATCAGTATCTCAGAGGGCTCTAAGGTGCCAAGAGTCTCACTGGACATTTAAGTCCCAAC
AAAGGCATACTTTCCGAATCCCAAGTCAAAAACCTTTCTAACTTCTGTCTCTCAGAGACA
AGTGAGACTCAAGAGTCTACTGCTTAGTGGCAACTACAGAAAAGTGTGTTACCCAGAA
AAACAGGAGCAATTAGAAAAGGTTCCAAATATTTCAAGCTCCGCAACAGGATGTGCTTT
CCTTTGCCCATTTAGGGTTTCTCTCTTTCCTTCTCTTTAATAACCACT

FIG. 1F

11718-1&2 cons

TGCGCTGAAAAAACAACGGCCTCCTTTACTGTTAAATGCAACCCACAGGTGCTTAGCCGTGGG
CATCTCAACCACCAGCCTCTGTGGGGGGCAGGTGGGCGTCCCTGTGGGCCTCTGGGCCAC
GTCCAGCCTCTGTCTCTGCTTCCGTTCTTCGACAGTGTTCGGGCATCCCTGGTCACTTG
GTACTTGGCGTGGGCCCTCCTGTGCTGCCAGCAGCTCCTCCAGGXGGTGGGCCCGCTTCA
CCGACGCCTCATGTTGTGTCCGGAGGCTGCTCAGGCCTCCTCCTTCTCGGAGGGCTGT
CTTACCCCTCCGGXGCACTCTCTCCAGCTCCAGCTGCTGGCGGGCTGCAGCGTGGCCAGC
TCGGCCTTGGCCTGCCGCTCTCCTCTCARAGGCTGCCAGCCGGTCTCGAACTCCTGGC
GGATCACCTGGGCCAGGTTGCTGCGCTCGCTAGAAAGCTGCTCGTTACCCGCTGGGCATC
CTCCAGCGCCCGCTCCTTCTGCCGCACAAGGCCCTGCAGACGCAGATTCTCGCCCTCGGCCT
CCCCAAGCTGGCCCTTCACTCCGAGCAGCCGCTCTGAAGCTTCCGCTCCGACTGCTCCAG
CTCGGAGAGCTCGGCCTCGTACTTGTCCCGTAAGCGCTTGATGGCGCTCTCGGCAGCCTTC
TCACTCTCTCTTGGCCAGCGCCATGTGGCCCTCCAGCGGTGAATGACCAGCTCAATCT
CCTTGTCCCGCCCTTCCGGATTCTTCCCTCAGCTCCTGTTCCCGTTACGACGCCAGCC
TCCTCTCTCTGGTGGCGCGCCCTCCACGCTGCTCTCCAGCTCCAGCTGCTGCTTCAG
GGTATTCAGTCCATCTGGCGGGCCTGCAGCGTGGCCA

13690.4

CAACTTATTACTTGAATATAATATAGCCTGTCCGTTTGTGTTTCCAGGCTGTGATATAT
TTTCTAGTGGTTTGAATTAATAATAAGGTTAATTTTCTCCCC

13693.1

TGCAAGTCACGGGAGTTTATTTTAAATTTTTCCTCCAGATGGAGACTCTGTGCCCCAGG
CTGGAGTGCAATGGTGTGATCTTGGCTCACTGCAACCTCCACCTCCTGGGTTCAGCGATT
CTCCTGCCACAGCCTCCCGAGTAGCTGGGATTACAGGTGCCCGCCACCACCCAGCTAAT
TTTTATATTTTATGTAAGACAGGGTTTCCCGATGTTGCCAGGCTGGTCTTGAACCTCTGA
CCTCAGGTGATCCACCTGCTCGCCCTCCCAAGTGTGGGATTACAGCGCTGAGCTACCC
GTGCTGCCACGCCACTGGAGTTTAAAGGACAGTCAATGTTGGCTCCAGCCTAAGCCGGCA
TTTTCCCCCATCAGAAAGCCCGCCCTCTGTACCTCAAAATAGGGCACCTGTAAAGTCAG
TCAGTGAAGTCTCTCTCTAAGTGGCCACCGGGGCCATTGGCNTCTGACACAGCCTTCCC
AGGANGCCTGCATCTGCAAAAGAAAATTCACCTTCTTTCCG

13694.1

CAGAGAATCTKAGAAAGATGTCGGCTTTCTTTAATGAATGACAGAGAGCCCATTTGTATC
CCTGAATCATTGAGAAAAGCCCGCCCTGGCGACAGCGCCGACCTAGGGATCGATCTGGAG
GGACTTGGGAGCGTGACAGAGCCTCTAGCTCGAGCGCGAGCGACCTCCCGCCGGGATCC
CTGGCGAGCAGATGGACCCCTACTGCAAGCTCAGTTGGATTACAGTTTCTCTCAGCAAGATAC
TCCTTGCCTGATAAATGAAGATTCTCAGCCTGAAAGCCAGGTTCTAGAGGATGATTCTGGT
TCTCACTTCAATGCTATCTCCACACCTTCTAAATCTCCAGACGCACAAAGAAAATCCTG
TGTTGGATGTTGNGTCCAATCCTTGAACAAACAGCTGGAGAAAGACGAGACCGGTAA
TAGTGGGTTCAATGAACAATTTGAAAGAAAACAGGTTCCAGACCCCTG

FIG. 1G

13694.2

GACTGTCTCGAACAAGGGACCTCTGACCACAGAGCTGCAGGAGATGCCAGAGTGGTGGCAG
GAGTGGAAAGCCAAAAGAACCACCTTCCTCCCTTGAAGGAGTAGAGCAACCATCAGAAG
ATACTGTTTTATTGCTCTGGTCAAAACAAGTCTTCCTGAGTTGACAAAACCTCAGGCTCTGGT
GACTTCTGAATCTGCAGTCCACTTTCCATAAGTTCTTGTCAGACAACTGTTCTTTTGCTTC
CATAGCAGCAACAGATGCTTTGGGGCTAAAAGGCATGCTCTGACCTTGACAGGTGGTGG
ATTTTGCTCTTTTACAAATGTACATCCTTACTGGGCTGTGCTGTACAGGGATGTCTTGC
TGGACTGTTCTGTATGGGGATATCTTGGTGGACTGTTCTCATGCTTAAATGCAGTATTA
GCATCCACATCAGACAGCCTGGTATAACCAGAGTTGGTGGTTACTGATTGTAGCTGCTCTT
TGTCCTTCATATGGCACAAGTATTTTCTCAACATCCTGGCTCTGGGAAG

13695.1

GAAATGTATATTTAA TCATTCTCTTGAACGATCAGAACTCTRAAAATCAGTTTTCTATAACAR
CATGTAATACAGTCACCGTGGCTCCAAGGTCCAGGAAGGCAGTGGTTAACACATGAAGAG
TGTGGGAAGGGGGCTGGAAACAAGTATTCTTTCTTCAAGCTTCATTCTCAAGGCCT
CAATTCAGCAGTCAATTGCTCTTGGTTTCAAAAGTCTGTGTGCTTCATGGAAGGTATAT
GTTTGTTCCTTAAATTTGAATGTGCCCAGGAAGGTCTGGAGATCTAAATTCAGAGTAAAG
AAAACCTGAGCTAGAATCAGGCAATTTCTTTACAGAAGTTCGCTTGCAGGCTAGAATGA
ANGGAAACAAACTTAGAAGCTCAACAGCTGAAGATAATCCCATCAGGCATTTCCCATAG
GCCTTGCAACTCTGTTCACTGAGAGATGTTATCTTG

13695.2

AGTCTGGAGTGAGCAAAACAAGACCAACAACAARRACAAGCCAAAAGCAAGAGGCTCCA
ATATGAACAAGATAAAATCTATCTTCAAGACATATTAGAAGTTGGCAAAATAATTCATGT
GAACTAGACAAGTGCTTAAGAGTGAAGTAAAATGACCTGGAGACAAGTGCAATCCCC
AGAICTCAGGGACCTCCCCCTGCTGTCACCTGGGGACTGAGAGGACAGGATAGTGCAATG
TTCTTTGTCTCTGAATTTTACTTATATGCTCTGAATGTTGCTCTGAGCAAGCCCCCTGGAA
AGTCTATCCCAACATATCCACATCTTATATCCACAAATTAAGCTGTAGTATGTACCTAA
GACGCTGCTAAATGACTGCTACTTCCCAACTCAGGCGCGCTGCATTTTACTAATGGGTCA
AATGATTCATTTTATGATGCTTCCCAAGCTGCTTGGCTTCTCTTCCCAACTGACAAATG
CCCAAGTTGAGAAAATGATCATAAATTTAGCATAAACCCAGCAATCGGCCACCCC

13697.1

TAGCTGTCTTCCTCACTCTTATGGCAATGACCCCATATCTTAATGGATTAAGATAATGAAA
GTGTATTTCTTACACTCTGTATCTATACAGAGCTGAGGTGATAGCCCGCTTGTCATTGT
CATCCATATTTCTGGCACTCAGGGGGAATTTCTGGAATATTGCCAGGAGCATGGCAGA
GGGGCACAGTGCAATCTGGCGCAATGCACATGGCTCAGCCTGGGTAAATGAGTGATATAC
ATTACCTCTGTTACAACTCAATGGCCACACCACTCACAAGGCCCCACCAAAATACCAGAG
CCCAAGAAATGTAGTCTCTTGAATGCTTCTGCTGTGTCACCCCAAAATCTCATCTTGA
ATTGTAAGCTCCCAATAATCCCATCTCTTGTGGAGGGACCTGGTG

FIG. 1H

13697.2

ATCATGAGGATGTTACCAAAGGGATGGTACTAAACCATTTGTAATTCGTCTGTTTTCACT
GCTTTGAAGATACTACCTGAGACTGGGTAAATTTATAAACAAAAGAGATTAAATTGACTCAC
AGTTCTGCATGGCTGAAGAGGGCTCAGGAAACTTACAGTCATGGTGGAGGCAAGGAGG
AGCAAAGGCATGTCTTACATGTCTAGTAGGAGAGAGAGCGAGAGCAGGAGAACTGCCACTT
ATAAACCATTCAGATCTCATAACTCCCTATCATGAGAAAAACATGGAGGAAACCACTC
ATGATCCAAATCACCCTCCCGCCAGGTCCCTCCCTCGACACGTGGGGATTATAATTCAGGATT
AGAGGGACACAGAGACAAACCATATCATCATTCATGAGAAATCCACCCTCATAGTCCAAT
CAGCTCTTACCAGGCCCACTCCAACTGCGGATTGCAATTCACATGAGATTGGATG
GGGACACAGATTCAAACCATATCATAC

13699.1&2

CATGGCCCTTTCTCCTTAGAGGCCAGAGGTGCTGCCCTGGCTGGGAGTGAAGCTCCAGGCAC
TACCAGCTTTCTGATTTTCCCGTTTGGTCCATGTGAAGAGCTACCACGAGCCCCAGCCTCA
CAGTGTCCTCAAGGGCAGCTTGGTCTCTTGTCTGCAGAGGCAGGCTGGTGTGACCTT
GGGAACCTGACCCGGGAACAACAGGTGGCCAGAGTGAGTGTGGCTGGCCCTCAACCT
AGTGTCCGTCTCTCTCTCTCTGGACCCAGTCTTTGAGTTTAAAGGCATTAAAGTGTAGATA
CAAGCTCCTTGTGGCTGGAAAAACACCCCTCTGCTGATAAAGCTCAGGGGGCACTGAGGA
AGCAGAGGGCCCTTGGGGGTGCCCTCTGAAAGAGAGCGTCAGGCCATCAGCTCTGTCCCTC
TGGTGTCTCCACGTCTGTCTCTCCTCACCTCCATCTCTGGGAGCAGCTGCACCTGACTGGCCAC
CGGGGGCAGTGGAGGCACAGGCTCAGGGTGGCCGGCTACCTGGCACCTATGGCTTAC
AAAGTAGACTTGGCCCACTTCTCTTCCCTGAGGGGAGCACTCTGACTCTAACAGTCTT
CCTTGGCTGCCATCATCTGGGGTGGCTGGCTGTCAAGAAAGGGCGGGCATGCTTTCTAAA
CACAGCCACAGGAGGCTGTACGGCAATCTCCAGGTGGGAAACAGTCTTAGATAAGTAA
GGTGACTTGGCTAAGCCCTCCAGCACCTTGAATCTTGGAGTCTCACAGCAGACTGCATGT
SAACAACCTGCAACCGAAAAACATCCCTCACTATAAAA

13703.3

CCAGAACCTCCTTCTCTTTGGAGAAATGCGGAGCCCTCTTGGAGACACAGAGGGTTTCACTT
TGGATGACCTCTAGAGAAAATGGCCAAAGAGCCACCTTCTGGTCCCAACCTGCAGACCCC
ACAGCAGTCAGTTGGTCAGGCCCTGCTGTAGAAAGGTCACTTGGCTCCATTGCTGCTTCCA
ACCAATGGGCAGGAGACAAGCCCTTAAATCTCGCCACCCATTCTCCTGTACCAGCACCT
CCGTTTTCACTCAGYGTGTCTCCAGCAACGGTACCGTTTACACAGTCA

13705.1

TGCATGTAGTTTATTTATGTGTTTTSGTGTGGAAAAACCAAGTGTCCCAGCAGCATGACTGA
ACATCACTCACTTCCCTACTTGATCTACAAGGCCAACGCCGAGAGCCACAGACAGGATTTC
CAAAACACACTGCCACGACAAATATTGTGGATCCGCTGTACGGTAAGTGTCCGTCACTGACCCA
RACGCTGTTACGTGGCACAAGACTGTACAGTCCACGTAAACAGCACTGTACTTTTCTCCCA
TGAACAGTTACCTGCCATGTATCTACATGATTCAGAAATTTTGAACAGTTAAITCTGACA
CTTGAAATAATCCCATCAAAAACCGTAAAAATCACTTTGATGTTTGTAAACGACAACATAGCAT
CACTTTACGACAGAAATCATCTGGA AAAACAGAACACGAAATACATACATCTTAAAAAATG
CTGGGGTGGGCCAGGCACAGCTTCAAGGCTGTAAATCCAGCACTTTGGGAGGCTTAAACCG
GGTG

FIG. 11

TGGGGCGGAAAAGAAGCCAAGGCCAAGGAGCTGGTGGCGCAGCTGCAGCTGGAGGCCGAG
GAGCAGAGAAAGCAAGAAGAACGGCGCAGAGTGTCTGGGCTGCACAGATACCTTCACCTTG
CTGGATGGAAAATGA AAAATTACCCGCTGCTTGTGGATGCAGCGGTGATGTGATTTCTCTCC
CACCAATAACCAAGCAGTGAGCAAGCAAAAGGTTAAGAAAACGACTCTGTATTTGTTTTGG
AAGTAACAAGTCCACCAGTCTGCAGATTGCAAGGATGTCAATGGATGCCCTCACTTCGAA
AATGGCAAGAAATGAAAAAGTACACTTTAGAAAAATAAGGGAAGGATCACTCTCAGAT
ACTGAAGCCGATCGCTCTCTGGCACTCCGACATCCCAACCAAGGATCCCACTGCTGGA
AAGGACGGGGCTTCTCTCTGGTGGTGAACNGTCCCGGTGGTGA TCTTGAANGGAA
CCTGAANGTGGTGTACCCCGTCCAAGGCCGACCTTGGCCAC

TCCGCGCTCGCAGGGCNCGTGCCACCTGCCYTCCGCCCCGCTCGCTCGCTCGCCGCCGC
GCCGCGCTGCCGACCCGYCAGCATGCTGCCGAGAGTGGGCTGCCCGCGCTGCCGCTGCCG
CGCGCGCGCTGCTGCCGCTGCTGCCCTGCTGCTGCTGC

GGCGGCTAGGCATGCCAAGTGCAGAACAGCAAGAGCTTTCAGACTACGTCGGGAAGAAT
GAAATAAACCAAAAATTATGGCCCAAGATTCAGCAACAGGGCAGAGGGAGCTCCAGCCCGAGA
GGCTATTATTAGCTACGTTGAGGACAGCAAGACGCTGTACTGTACTATCAACAAGACAAGA
GAGCTTCAAGAGATTGGAAACAAATATATATGATGCCCTATTAAACTCACCATTGGCCGGA
TAACCTGCTGTTGAAAGACATTTTCAAGAGAGTGGAAAGACATAAAGTGGAGACCAAGATG
AAGTTCACCACCTGATGACACTTGCAGAACAGATAGCTACCTT

TCTGAAGGTTAAATCTTTTCATCTAAATACGGATATGTGTA AACACCTATAGCATAGAGTTG
TTTGAGATTAATAAGAGATTAATACATGTAAAAATATGTGCGCTGGCATACACCAAGAATGTTG
TCTTGTTGATGATGATGATGATGATGATGATTAATTTTCTATCCCCAGTGGCACAACCTGCTTG
AAGCTATTAGAAATGCAATACATGTTCTTGCACTGAGATCAATTTCCCATGTTGTCTGAC
TGATCAAGCCCTACATTTCTCTGACAGGATGACATTTTGACCAAGATCTTAAAGAAAAAT
CAGATGCCCTTACCTGACCACTGCTTTGGTGATCCCATGGCACTTTGTACATCTCTCCATTAG
CTCTCATCTCACCAGGECATCAATTGTTATGTGCTGCTTCTGTAAGCTTGCAGCTGGCTAC
CATCMGTGAGATAAAAAATCATCTCTTCAATAAAATAGTGACCTCTCTTTTATTGCAATT
CCCAAAGCCAAAGCACCGTGGCANGGTAC

FIG. 1J

13709.2

TATGAAGAAGGGAAAAGAGATAATTGTGAAAGAAATGGGTCCAGTTACTAGTCTTTGA
AAAGGGTCAGTCTGTAGCTCTTCTTAATGAGAATAGGCAGCTTTCAGTTGCTCAGGGTCAG
ATTTCCTTAGTGGTGTATCTAATCACAGGAACATCTGTGGTTCCCTCCAGTCTCTTTCTGG
GGGACTTGGGCCCCTTCTCATTTCAATTAATTAGAGGAAATAGAACTCAAAGTACAATT
ACTGTTGTTTAAACAATGCCACAAAGACATGGTTGGGAGCTATTTCTGATTTGTGTAATAAT
GCTGTTTTTGTGTCTCATAAATGGTTCCAAAAATGGGTGCTGGCCAAAGAGAGATACTGT
TACAGAAAGCCAGCAAGAAGACCTCTGTTCAATCACACCCCGGGGATATCAGGAATTGAC
TCCAGTGTGTGCAAAATCCAGTTTGGCCTATCTTCT

13712.1&2

TGAGGGACTGATTGGTTTGTCTCTGCTATTCAATTCCCCAAGCCCCTTGTTCCTGCAGCG
TCCTCCTTCTCATTCCCTTATGTTGTACCCCTCTCTTTCATCTGAGACCTTTCCTTCTTGATGT
CGCCTTTTCTTCTTCTGCTTTTTCTGATGTTCTGCTCAGCATGTTCTGGGTGCTTCTCATCT
GCATCAITTCCTTTCAGATGCTGTAGCTTCTTCTCCTCTTCTGCTCCTTTTCTTTTTCTTTT
TTTTGGGGGGCTTCTCTCTGACTGCAAGTTGAGCGGCCCCAGGGTCTGGCTTTTGAGACG
AGCCAGGAAGGGCTGCTCTGGGCTCTAGGCGAGCAAGCTTGGCTTCAATGTGATCCCA
AGACGGGACGCTTGTGTGCTGTTCGCCCCCTCACAGGCTTGGAGCAGCATCTCATCAGTCA
GAATCTTTGGGACTTGGACCCCTGGTTGTGCTCATCACTGCAGCTCTCAAGTCTTTGTTT
GGCTTCTCTCCACCTGAAGTCAATGTAGGCACTTTCACAACTTCTGATACAGCAAGTTGG
GCTTGGGATGATTATAACGGCTGCTCTCTTACAAAGGCTCCTTATCTGTACTCCATCCTG
CCCAGTTTCCACTACCAAGTTGGCGGAGTCTTGTGAAGAGCTCATCCACCAGTGGTTT
GTCAACTCCTTGGCAGGCTCATCTCTACCCCATGAGTGTCTTGGTTCAAGYGTACCCCTGA
GAGCCTGAGTGATACCAATTCCTCTTCCG

13714.1&2

GACAACATGAAATAAATCCTAGAGGACAAAATTAAGTCAATAGAGTGTAGTCTAGTTAA
AAACTCCAAAAATGAGCAAGTCTGCTGGGAGTGCAGGAAGGGCTATACTATAAATCCAAAG
TGGGCTCCTGATCTTAACAAGCTATGCTCATTATACACATCTCTGAAGTGGACATACCAC
CTTTACCGCAGGAACAGGGCTTCCAACTTCTAAGGGAATTAACATGCACCACCCACATC
TAACCTACCTGCGGGCTAGCTACCATCCCTGCTTCCGTGAAATCAGTGCTC

13716.1&2

TTGGAATTAAATAAACCTGGAACAGGGAAGGTGAAAGTTGGAGTGAGATGTCTCCATAT
CTATACCTTTTGTGCACAGTTGAATGCCAAGTCTTTGGGTTTAGGGCATCTTAGAAGTTGATT
GATCGAAAAACACAGACAGGAAGTGGTGGGAGGTCAAAGTGGGGAAGTTGCTGAATGTGGA
ATAACTTACCTTTGTCTCCACTTAAACCAGATGTGTTGCAGCTTTCCTGACATGCAAGGA
TCTACTTTAAATCCACACTCTCATTAATAAATGAATAAAGGGAATGTTTTGGCACCTGA
TATAATCTGCCAGGCTATGTGACAGTAGGAAGGAATGGTTTCCCTTAACAAGCCCAATGC
ACTGGTCTGACTTTATAAATAATTAATAAATGAAGTATTATC

FIG. 1K

13718.2

AAACTGGACCTGCAACAGGGACATGAATTTACTGCARGGTCTGAGCAAGCTCAGCCCTCT
ACCTCAGGGCECCACAGCCATGACTACCTCCCCAGGAGCGGGAGGGTGAAGGGGGCTG
TCTCTGCAAGTGGAGCCAGAGTGGAGGAATGAGCTCTGAAGACACAGCACCCAGCCTTCT
CGCACCAGCCAGCCTTAACCTGCTGCTGACCTGAAACCAGAACCCAGCTGAATGCCCC
TCCAAGGGACAGGAAGGCTGGGGAGGGAGTTTACAACCCAGCCATTCCACCCCTCCC
CTGCTGGGGAGAATGACACATCAAGCTGCTAACAAATGGGGGAAGGGGAAGGAAGAAAA
CTCTGAAAACAAAATCTGT

13722.3

CATGCGTTTCACCACTGTTGGCCAGGCTGGTCTCGAACTCCTGGCCTCAAGCAATCCACCC
GCCTCAGCCTCCAAAAGTGTCTGGATTACAGATGTGAGCCATGGCACCATGCCAAAAGGC
TATATTCCTGGCTCTGTGTTCCGAGACTGCTTTAATCCCAACTTCTCTACATTTAGATTA
AAAAATATTTTATTCATGGTCAATCTGGAACATAATTAAGTCTTAAGTTTCCACTGAT
GTATATAGAAGGCTAAAGGCACAAATTTTATCAAACTCTAGTAGAGTAACCAACATAAAA
TCAITTAATTAATTTCAACTTAATACTAAATGACATTCCTCAAAAGAGCTGTTTCAATCCT
CATAGGTTCTTTATTTTCAAAATATATTTGCCATGGGATGCTAATTTGCAATAAGGGCG
ATAATGAGAATACCCAAACTGGA

13722.4

GTTGGACCCCCAGGCACTGCAAAAGACACTTCTTGCCCGAGCTGTGGCCGGAGAAAGCTGAT
GTTCCCTTTTATTAAGCTTCTGATCCGAAATTTGATGAGATGTTTGTGGGTGTGGGAGCCAG
CCGTATCAGAAATCTTTTAGGCAAGCAAGGCGAATGCTCCTTGTGTTATATTTATTGAT
GAATTAGATTCTGTTGGTGGCAAGCAATTTGAATCTCCAATGCATCCATATTCAAGCGCAGA
CCATAAATCAACTTCTTGTGAAATGGATGGTTTTAAACCCAAATGAAGGAGTTATCATAAAT
AGGAGCCACAACTTCCAGAGGCAATAGATAATGCTTAATACCTCCTGCTGCTTTTGA
CATGCAAGTTACAGTTCCAGGCGAGATGTAAGGTCGAACAGAAATTTGAAATGGTA
TCTCAATAAAATAAAGTTTGATCAATCCCGTTGATCCAGAAATTATAGCCTCGAGGTACTG
GTGGCTTTTCCGGAAGCAGACTTGGGACAAATCTT

13724-13698-13748

GCCTACAACATCCAGAAAGAGTCTACCTGCACTGGTCTCGTCTCAGAGGTGGGATGC
AGATCTTTCGTGAAGACCTGACTGCTAAGACCATCACTCTCGAAGTGGAGCCGAGTGACA
CCAATGAGAACGTCAAAGCAAGATCCARGACAAGGAAGGCRTYCCTCCTGACCAGCAGA
GGTTGATCTTTCCGGAAAGCAGCTGGAACATGGDCGCACCTGTCTGACTACAACATCC
AGAAAGAGTCYACCTGCCACCTGGTCTCCGTCTCAGAGGTGGGATGCARATCTTCGTGA
AGACCTGACTGGTAAGACCAATCACTCTGAGGTGGAGCCAGTGACACCATCGAGAAATG
TCAAGCCAAAGATCCAAGATAAGGAAGGCAATCCCTCCTGATCAGCAGAGGTTGATCTTTG
CTGGGAAACAGCTGGAAGATGGACCCACCTGCTGACTACAACATCCAGAAAGAGTCCA
CTCTGCACTTGGTCTCGGTTGAGGGGGGGTGTCTAAGTTTCCCTTTTAAGGTTTCMAC
AAATTTGATTGCACTTTCCTTTCAATAAAGTTGTTGCAATCCC

FIG. II

13730.1

GAACTGGGCTCTGAGCCCAAGTCATGCTTGTGTCCGCATCTGCCGTGTACCTCTGTGCC
TGCCCTCACCCTCCCTCCTGGTCTTCTGAGCCAGCACCATCTCCAAATAGCCTATTCTT
CCTGCAAAATCACACACACATGCGGGCCACACATACCTGCTGCCCTGGAGATGGGAAGTA
GGAGAGATGAATAGAGGGCCATACATTGTACAGAAAGGAGGGGACGGTGCAGATAAAAGC
AGCAGACCCAGCGGCAGCTGAGGTGCATGGAGCACGGTTGGGGCCGGCATTTGGGCTGAGC
ACCTGATGGGCTCTATCTCGTGAATCCTCGAGGCAGCGCCACAGCAGAGGAGTTAAGTGG
CACCTGGGCGAGCAGAGCAGGAGCTGAGGGTCAGAGTGGAGGCTAAGCTGCCCTGGA
ACTCTCAATCTTGCTGCCCTAGTATGAAGCCCCCTTCTGCCCTACAATTCCTGA

13732.1

ATGGATCTTACTTTGCCACCCAGGTTGGAGTGCAGTGTGCAATCTTGGCTCACTGCAGCC
TTAACCCTCCAGGCTCAAGCTATCCTCCTGCCAAGGCTTCCACATAGCTGGGACTACAGG
TACACNGCCACCACACCCAGCTAAAATTTTGTATTTTGTAGAGACGGGATCTCGCCAC
GTTGCCAGGGCTGGTCCCATCCTGACCTCAAGCAGATCTGCCACCTCAGCCCCCAACGT
GCTAGGATTACAGGCGTGACCCACCGCACCCAGCCTTTGTTTTGCTTTTAATGGAATCACC
AGTTCCCTCCGTGTCTCAGCAGCAGCTGTGAGAAATGCTTTGCATCTGTGACCTTTATGA
AGGGGAACCTTCCATGCTGAATGAGGGTAGGATTACATGCTCCTGTTTCCCGGGGTCAAG
AAAGCCTCAGACTCCAGCATGATAAGCAGGGTGAG

13732.2

ATAGGGGCTTTAAGGAGGGAATTCAGGTTCAATGAGGTGTAAGGCCAGGGCTCTTATCC
AGTAAGACTGGGGTCTTACATGAGAAAGAGACACCCGAGGTCTTCTCTGCGGTGTG
AGGATGCATCAAGAAGCCCGCCCTCTGCAAGCGAAGGAGAGCCCGCACCAGA.AACCGAC
ACCTTCATCTTGGACTTGCAGCTCTAGAACTGAGAAATAAGTGTCTGTTGGTTAAGCCA
CCAGTTTGTAGTATTTCTCTTATGGCTTCTTAAGCAGACTAACAAACAAACACCCAAAATT
A.ACTGATGGCTTCGCTGTCTTCTGTAAAAATTGCTATGAGAGAACTTTCACTCACTGTTT
GCACTTCTCCTCAGTCCCTGGTTCTTCTTCTCAGATAATCCCAATTTCAATTTATAGTTT
ATGGCCAGGCAGCTCATTCATCAGCCCATCTCCTGAGCTAAACCGACCTGCTCTGCT
CACTTCTTGAAGTGGCTCTCATCATCAGCCCTCTTGCAGAGATTTCAATTCCTCCCGTGCCA
GGTACTTCACGCACCAAGCTCA

FIG. 1M

GGATAATGAAGTTGTTTTATTAGCTTGGACAAAAAGGCATATTCCTCTATTTTCTTATACA
ACAAATATCCCCAAAAATAAAGCAAGCATATATATCTTGAATGTGTAATAATCCAGTGATA
ACCAAGAGCGAGTACTTTAAAAGAAAAAAAATATGTATTCTGTGAGGTTAAAAATGAGAA
TCAAAACCATTAATCTGCTAATCTATTATTTTTGCTTTCTTTTGGTTAAGAGAGGCCAAT
GCAATACACTGAAAAAGGTTTTATCTATTCTGGCATTTGGAAATAGACATATCAAAACCCC
AGCCCCCATTTCCAAACTTTAAAGACCACAACAAGTAATTTACTTTTTCTGAACATTTGGTTTT
TTCTGGAAAAATCGGAAATATAAAATAGACTTTGCAGACTCTTATGAGATTAATAAGATA
ATGATGAAATTTCTTCTCTTTTTACTTCTTTTTCTTTTTGAGATGGAGTCTCACCCCGT
CACCCAGCTGGAGTACAGTG

CGACTGCACTCCAGGCTGGGTGACGGAGTGAGACTCTGTCTCAAAAAAAC.AAACAAACA
ACAAACAAAAAAGTGA.AAAGG.AAATAGAGTTCTCTTTCTCT.ATATATGAATATATTATT
CAACAGATTGTTGATCACTACC.ATACTGCTTGCGTATGTTCT.AATTGCTGGGGATACAGCA
AGAGGTTCTCGACACCTTCA.TGGACCATGAAG.ATAAATAAAC.AAAGTTAA.TTTCGAAGCT
AGGCATGGTTGCTCACACCTTTAGTCCAGCAGCTTTGGGAGGCTGAGGACGTTCCAGTACT
TGGGCCAGGAGGATCA.AAGGCTCAGTGCAGCC.AAGATTGTGCCACTACTCTCCAGGCTGGG
TAAGCAAGCAAGACCTCTGTCTAGGGGGA.ACAAAAGTTAA.TTTCAGATTGTTGTAAGT
CTGTAAAGGA.ACTAAATAGGTTGATATTCAGAGCAGC.ACTGAAGCGCAGGCGTGTCGC
TCACGCTGTGGTCT.AACGCTTGGGAAGCCCGAGCGGGCGGATCACAAGGTC.AGGAGAA
TTTGGCGAGGCATCGGT

AGAAATCCATTTATTGGGTTTAAACTAGTTACACAAGTGAATCAGTTTGGCACTACTTTA
TACAGGGGATTACGGCTGTGTATCCCGACACTTAAATCTGTATACCAGGACCACTGCTGTGCT
TAGGCTGTCTATTCACTGCTTCAAGCATGTAGATACTAAAAATATACTGTAGTGTTCCTTTAA
GGAAGACTGTACAGCGGTGTGTTCGGAAGATGCATTCACCAATTTGTGAATTTATTCACCCC
AGAAGATACCTTTCACTGTATAAAGCTGTCTATAGGCAACATGTGTGTGTAGCATTCAGAG
ATGCACACAAAAATGTTACATAAAAAATCAGACATTTCTAATGATAACTGAACCTGAAAAAA
AAAAAAACCCCACTCTCAATTTTGTATCAACATAAAGAAAAATTAATTTAAAAACACAAA
AAATGGCATCTAGTGGTATCAAAAGCC

[illegible]

FIG. 1N

13738.1

TTTGACTTTAGTAGGGGTCTGAACTATTTATTTTACTTTGCCMGTAATTTARACCYTATA
TATCTTTTCATTATGCCATCTTATCTTCTAATGBCAAGGGAACAGWTGCTAAMCTGGCTTCT
GCATTWATCACATTAAAAATGGCTTTCTTGGAAAATCTTCTTGATATGAATAAAGGATCTT
TTAVAGCCATCATTTAAAGCMGGNTTCTCTCCAACACGACTCTGCTASGGGGGGKGAGCT
GTGAACCTCTGGGTGAAGGCTTTCCCATACACACTGCAATGACMTGGTTTCTGACCAGBGTG
AGTTA

13738.2

AGAGAAGCCCCATAAATGCAATCAGTGTGGGAAGGCCCTTCAGTCAGAGCTCAAGCCTTTT
CCTCCATCATCGGGTTCTACTGGAGAGAAAACCTATGTATGTAAATGCGGCAGAGCC
TTTGGTTTTAACTCTCATCTTACTGAACACGTAAGGATTTCACACAGGAGAAAAACCTATG
TTTGTAAATGAGTGGCGAAAGCCTTTCTGCGGAGTTCCACTCTTGTTCAGCATCGAAGAGT
TCACACTGGGGAGAAAGCCCTACCAAGTGGCTTGAATGTGGGAAAGCTTTCAGCCAGAGCTC
CCAGCTCACCTACATCAGCCGAGTTTCACACTGGAGAGAAAGCCCTATGACTGTGGTGACTG
TGGGAAGGCCCTTCAGCCGGAGGTCAACCTCAATTCAGCATCAGAAAGTTTCACAGCGGAGA
GACTCGTAAGTGCAGAAAACATGGTCCAGCCTTTGTTTCATGGCTCCAGCCTCACAGCAGAT
GGACAGATTCCCACTGGAGAGAAAGCAGGCAACCTTTAACCATGGTGCAAAATCTCATT
CTGCGCTGGACAGTTC

13739.1&2

GAGACAGGCTCTCACTTTGTCACCCAGGCTCGAATGCAAGTGGTGGCATCTTACGTAGCTCA
CTGCAGCCCTGACCTCCTGCACTCAAAACAAATCTGCTGCTCAGCCTGCAAGTAGCTGGG
ACTGTGGCTGCAATGCCACCATGCTGCTCAACCTTTGTAGTTTGTAAACATGGGGTTTT
GCCATGTTGCACATCCTGCTCTTGAACCTGCTGACCTCAAAACGATCTGCCACCTCGGCTC
CCAGAAATGTTGGGATTACAGCGGTAAACCCAGCAGCCTGCCCCCAATTACGGTAATCTTAGC
ATCCACTTGTCTCACTGACAATTAATCAATAAGAGATGATAAGCACTGGAAAGAAAAATTTTT
ACTAGCCTTTGCAATTTTTTCTCTTTTACCTTTATACAGAGGATTGGATCTTTAGTTTTT
CTTTAACTGATAATAAAACATGAAACGAAATAAGTTTACCTGAGATTACACAGAGATAAC
CGGCATCACTCCCTTGGCTCAATTCAGCTTTTACCACATCAATTATTTTACAGGTCAGGA
TAAAGGCCCTTAGTCTGCTTTGGCACTTTTCTTCCACTTTTTGTAAACCTGTTGCCGACA
AATGGAAATTGACAGCGTATGCCATGACTATCCATTTGTCAGGCAACGCTGTCAATTTTT
CCACCAATCCCTTGTCTCTTTGGAGAGATCTTCTATCAGCTAGTCTTTGGCAAAAGTA
ATTGCAACTTCTCTAGGTAATCTATTGCTCCGTTCCACTGCTGGAACCCCTGGGACAGGA
CTAAACCTCCAG

13741.1

ATCTCATATATATATTTCTTCTGACTTATTTGCTTCTGTCACCGCATTTAAATATC
ACAGAGACCAAAATAGAGCGGCTTTCTGGTGAACCGCATGGCAGTCACAGGACAAAATAC
AAAACCTAGGGGGCTCTGCTTCTCATACATCATACAAATTTCAAGTATTTTTTTATGTACA
AAGAGCTACTCTATCTGAAAAAAATTAATAAAATGAAGACAAATATGTTATGTCATC
CTAGCAAGAAAGAAATGGGAAGAAAGAACGGGGCAGTTGGGTACAAATTCSTGTCCCTGT
TCCCAGGGACCACTACCTTCTGCTGCACTGAGTTCCCCACAGCCTCACCCATCATGTCACA
GGGCAAGTGGCAGGGTACGTGGGACCACTGGAGACAGGAACCAACATACTTTGGC
CTGGAAGATAAGGAGAAAGTCTCAGAAACACACTGGTGGGAAGCAATCCACNGGCCGT
GCCCCANGAGCTTCCACCTGCTGCTGCTGCTGGGTGGCTTTGGGAACAGCTTGGGCAG
GCCCTTTGGGTGGGNGCAACTGGGCTTTGGCCCCGTGTCGAAG

FIG. 10

13742.1

AAACATTGAGATGGAATGATAGGGTTTCCCAGAATCAGGTCCATATTTAACTAAATGAA
AATTATGATTTATAGCCTTCTCAAATACCTGCCATACTTGATATCTCAACCAGAGCTAATTT
TACCTCTTTACAAATTAATAAGCAAGTAACTGGATCCACAATTTATAATACCTGTCAATT
TTTTCTGTATTAACCTCTATCATAGTTTAAGCCTATTAGGGTACTTAACTCTTACAAATAA
ACAGGTTTAAATCACCTCAATAGGCAACTGCCCTTCTGGTTTCTTCTTTGACTAAACAAT
CTGAATGCTTAAGATTTTCCACTTTGGGTGCTAGCAGTACACAGTGTACACTCTGTATTCC
AGACTTCTTAAATTATAGAAAAAGGAATGTACACTTTTTGTATTCTTTCTGAGCAGGGCCG
GGAGGCAACATCATCTACCATGGTAGGGACTTGTATGCATGGACTACTTTA

14351.1

ACTCTGTGCCCCAGGCTGGAGCCCCABTGGMGGGATCTCGACTCCCTGCAAGCTMCGCCTC
ACAGGWTCAATGCCATTCTCCTGCCTCAGCATCTGGAGTAGCTGGGACTACAGGGCCGAGC
CACCATGCCCAGCTAATTTTT

14351.2

ACCTTAAAGACATAGGAGAAATTAATCTGGAGAGAAAGCTTACAAATGTAAGGTTTCTG
ACAAGACTTGGGAGTGATTCACACCTGGAAACAATACTGGACTTCACACTGGABAGAAA
CCTTACAAGTGTAATGACTGTGGCAAGGCTTTGGCAAGCACTCAACACTTATTCACCATC
AGGCAATTC

14354.2

AGTCAGGATCATGATGCCCTCACTTTCCCACAGCGATGAATGGAGGGCCAAATATGTGGGC
TATTACATCTGAAGAACCTACTAAGCATGATAAACAGTTTGATAACCTCAAACCTTCAGGA
GGTTACATAACAGGTGATCAAGCCCTACTTTTTCTACAGTCAGGTCTGCCGGCCCCGG
TTTTAGCTGAAATATGGGCTTATCAGATCTGAACAAGGATGGGAAGATGGACCAAGCAAG
AGTTCTCTATAGCTATGAACCTCATCAAGTAAAGTTGACGGGCCAACAGCTGCCCTGTAGT
CCTCCCTCCTATCATGAACAAGCCCTATGTTCTCTCCACTAATCTCTGCTCGTTTGGGA
TGGGAAGCATGCCCAATCTGTCCATTCAAGCCATTGCCCTCCAGTTGCACCTATAGCAAC
ACCCTTGCTTCTGCTACTTCAGGGACCAGTATCTCCCTAATGATGCCCTCT

14354.1

CTTTCGATTTCCTTCAATTTCTCAGCTTCAATTTATGAAGTTGTTCAAGGGCTAACTGCTG
TGATTATAGCTTTCTCTCAGTTCTTCAGCTGATTGTTAAATGAATCCATTTCTGAGAGCT
TAGATCCAGTTTCTTTTCAAGACCATCTAATGTTCTTTAAGTCTTTGCCATAATTTCTTCC
TTTTCTGATGACTTTCTATGAAGTAACTGATCCCTGAATCAGGTGTGTTACTGAGCTGCAT
GTTTTTAATTTCTTTGTTAATAGCTGCTTCTCAGGGACCAGATAGATAAGCTTATTTTGAT
ATTCTTAAGCTCTTGGTGAAGTTGTTGCAATTCATAAATTTCCAGGTACACTGGTTATCC
CAAACCTCT

FIG. 1P

16431.1.2

GTGGAGGTGAAACGGAGGCAAGAAAGGGGGCTACCTCAGGAGCGAGGGACAAAGGGGGG
 GTGAGGCACCTAGGCCCGCGCACCCCGGCGACAGGAAGCCGCTCTGAACCGGGGTACCGG
 GTAGGGGAAGGGCCCGCGTAGTCCTCGCAGGGCCCCAGAGCTGGAGTCGGCTCCACAGCC
 CCGGGCCGTCGGCTTCTCACTTCTCTGGACCTCCCCGGCCCCGGGCTGAGGACTGGCTCG
 GCGGAGGGAGAAAGGAAACAGACTTGACAGCTCCCCGTTGTCTCGCAACTCCAAGTCC
 GAGGAAGTCTCAATTTCTTCCCTCGCTCTTACCCCCCAGCTCATGTAGAAAGGTGCTGAA
 GCGTCCGGAGGGAAGAAGAACTGGGCTACCGTCTGGCTTCCCMCCCCCTTCCCGGGG
 CGCTTTGGTGGGCGTGGAGTTGGGGTTGGGGGGGTGGGTGGGGTTCTTTTGGAGTGCT
 GGGGAAGTCTTTTCCCTTCTTCAAGTTCAGGGGAGGGGAAAGGGAATGCCAATTCAGAGAGACAT
 GGGGGCAAGAAGGACGGGAGTGGAGGAGCTTCTGGAAGTTTGCAGCCGTCATCGGGAGG
 CGGCAGCTCTAACAGCAGAGAGCGTCACCGCTTGGTATCGAAGCACAAGCGGCATAAGTC
 CAAACACTCCAAAGACATGGGGTTGGTGACCCCGAAGCAGCATCCCTGGGCACAGTTAT
 CAAACCTTTGGTGGAGTATGATGATATCAGCTCTGATTCGACACCTTCTCCGATGACATG
 GCCTTCAAAGTACCGGAAGGAGAACGACGAACGTCGTGGATCAGATCGGAGCGACCGG
 CTGCACAAACATCGTCACCACAGCAGAGCGGTCCCCGGGACTTACTAAAAGCTAAACAG
 ACCG

16432-1

GACATGTTTGCCTGCAGGGGACAGAGACAATGGGATTAGCCAGTGCTCACTGTCTTTAT
 GCTTCCAGAGAGGATGGGACAGCTCTCAGGTGAGAAATCCAGGCTGAGAAGGCCATGCTG
 GTTGGGGGCCCCCGAAGCAGGCTCCGATCCTCCCTGGCATCAGCGTAGACCCGCTGCTC
 AGGCTTGGGGTACCAAACTCATGCTCTGTACTGTTTTGGCCCCATCGGGTGAGAGGAAAAC
 TAGAAAAAGATTGCTGCTAAGGAATCAGCTGCCCTCATCTCCGCAATCAATGCT
 GGTGACAAACATATTCCTCTCTCCAGCAACAGACTCGGTGACTCCACACTGGGCTGACTGG
 CCTCTGAGGCTCGTGGCTAAGCCAGGGCTCCGTAAGGCTGATCGGCTGAAGTGGGTGG
 GGTGAGGGTTCTGACCCCTTCCCTTCCCATCCCATACCGCTGTCAATGAGCTCACACTGT
 GGTC

16432-2

GATGCCATGGTGGTTGCTAAATGCTCTCTGGGATGGAGCACTTCTCTCTGTGAGCCAGG
 GGACCCGCTCTCTCTGGAGCTTGGGGCAAGGAGGGAAGAGTGATACCAGGAAGGTGGG
 GCTGCAGCCAGGGGCCAGAGTCAGTTTCAGGCACTGGTCTCGGGCCCTCAAAGCTCTCTCG
 GGGACTGCTCAGGAGTGATGGTGGCTGGAGTTTCCCCCACTTCCCTGGCCACCTTGGAA
 GGTGCTTGGCTGCTCCAGGCTCTAGGCTGGGCTGATGGGTTTCTCCAGGACACAACTATC
 ATTAAGCCACCTCTCTCAGCTTGTACGGCCGACATGTGGGACAGGCTGTGCTCACAA
 CCCCCTGGCTGCTCTCCCTCCATCAGGAGGAGCCAGTGGAACTTCCGAAAGCTCCAG
 CATCTCAGCAGGCTCAAAGCTCTCTCTGGGCAAGCTCTGCTCTCTCACTGGAGGTCA
 TCTGGCTTGGCTCTCTCTCTCC

17184.3

TAAAAAGTGTAACAAAGGTTTATTAGACTTTCTTATGCCCCAGATCCAGGATGTCTA
 TGTAAACGTTATCTTACAAAGAAAGCACAATAATTTGGTATAAACTAAGTCAGTGAAGTGC
 TTAAGTGAATACCGTCCATCCAAAGTGGGTTTAAAGGTAAACTACCTGACGATATTGGC
 GGGGATCTTGCAGTTTGCAGTCTTCCCGGTTTGTCCAGGCTTCCGGTCTGTTCTTGGC
 ACTCATGGGACAGGCAATCTGCTGCTGTGTGGGGCCCCGCTGGAGCCCTTACGTGAAGCT
 GAAAGGTATCCACCTAGGGGGCTCTAGGGCACTGGGACCTTCATCCGGAACATAACAAGG
 TCGGGGACAGGCTCTTGGCTATGTGG

FIG. 1Q

FIG. 1R

17190.2

CAAGTTGAACGTCAGGCTTGGCAGAGGTGGAGTGTAGATGAAAACAAAGGTGTGATTATG
AAGAGGATGTGAGTCCTTTGGGTGTAGGAGAGAAAGGCTGTTGAGCTTCTATTTCAAGAT
ACTTTTACCTGTGCAAAAAGCACATTTTCCACCTCCTTCTCATGGCATTGTGTAAGGTGAG
TATGATTCCTATTCCATCTGCATTTTAGAGGTGAAGAATAACGTACAAGGGATTCAAGTGAT
TAGCAAGGGACCCCTCACTAAGTGTGATGGAGTTAGGACAGAGCTCAGCTGTTTGAATCT
CAGAGCCCAGGCAGCTGGAGCTGGGTAGGATCCTGGAGCTGGCACTAATGTGAGGTGCAT
TCCCTCCAACCCAGGCTCAGATCCGGAACCTGACCGTGCTGACCCCCGAAGGGGAGGCAG
GGCTGAGCTGGCCCGTTGGGCTCCCTGCTCTTACACCACACTCTCGCTTTGAGGTGCTG
GGCTGGGACTACTTCACAGAGCAGC

17191.2&89.2

TGGCCTGGGCAGGATTGGGAGAGAGGTAGCTACCCGGATGCAGTCCTTTGGGATGAAGAC
TATAGGGTATGACCCCATCATTTCCCCAGAGGTCTCGGCCTCCTTTGGTGTTCAGCAGCTG
CCCTGGAGGAGATCTGGCCTCTCTGTGATTTTCATCACTGTGCACACTCCTCTCCTGCCCTC
CAGCACAGGCTTGCTGAATGACAAACACCTTTGCCAGTGCAAGAAGGGGGTGCCTGTGGT
GAACTGTGCCCGTGGAGGGATCGTGGACGAAGGCCCTGCTCCGGGGCCTGCAGTCTGG
CCAGTGTGCCGGGGCTGCACTGGACGTGTTTACGGAAGAGCCGCCACGGGACCGGGCCTT
GGTGGACCATGAGAAATGTCATCAGCTGTCCCCACCTGGGTGCCAGCACCAAGGAGGCTCA
GAGCCGCTGTGGGGAGGAAATGCTGTTCACTTCGTGGACATGGTGAAGGGGAATCTCT
CACGGGGGTTGTGAATGCCCACCCCTT

FIG. 1S

AGCCAGATGGCTGAGACCTGCAAGAAAGAGTCAGGATCATGATGGCTCAGTTTCCCACAG
CGATGAATGGAGGGCCAAATATGTGGGCTATTACATCTGAAGAACGTACTAAGCATGATA
AACAGTTTGATAACCTCAAACTTCAGGAGGTTACATAAACAGGTGATCAAGCCCGTACTTT
TTTCCTACAGTCAGGTCTGCCGGCCCCGGTTTTAGCTGAAATATGGGCCCTTATCAGATCTG
AACAAAGGATGGGAAGATGGACCAGCAAGAGTTCTCTATAGCTATGAAACTCATCAAGTTA
AAGTTGCAGGGCCAAACAGCTGCCCTGTAGTCCTCCCTCCTATCATGAAACAACCCCTATGT
TCTCTCCACTAACTCTGCTCGTTTTGGGATGGGAAGCATGCCCAATCTGTCCATTCAACAG
CCAATTGCCTCCAGTTGCACCTATAGCAACACCCCTTGTCTTCTGCTACTTCAGGGACCAGTAT
TCTCCCTCAATGATGCCTGCTCCCTAGTGCCTTCTGTTAGTACATCCTCATTACCAAAATG
GAACTGCCAGTCTCATTACGCTTTATCCATTCTTATTCTTCTTCAACATTGCCTCATGCA
TCATCTTACAGGCTGATGATGGGAGGATTTGGTGGTGTAGTATCCAGAAGGCCAGTCTC
TGATTGATTTAGGATCTAGTAGCTCAACTTCTCAACTGCTTCCCTCTCAGGGAACTCACCT
AAGACAGGGACCTCAGAGTGGGAGTTCTCAGCCTTCAAGATTTAAAGTATCGGCAAAAA
TTTAATAGTCTAGACAAAGGCATGAGCGGATACCTCTCAGGTTTTCAAGCTAGAAATGCC
TTCTTCAGTCAAATCTCTCTCAAACTCAGCTAGCTACTATTTGGACTCTGGCTGACATCGAT
GGTGACGGACAGTTGAAAGCTGAAGAATTTATCTGGCGATGCCCTCACTGACATGGCC
AAAGCTGGACAGCCACTACCACTGACGTTGCCCTCCGAGCTTGTCCCTCCATCTTTCAGAG
GGGGAAGCAAGTTGATTTCTGTTAATGGAACTCTGCTTCATATCAGAAAAACACAAGAA
AAGAGCCTCAGAAAGAACTGCCAGTTACTTTTGGAGACAACCGAAAGCCAACTATGAAC
GAGGAAACATGGAGCTGGAGAACGCGACGCCAAAGTGTGATGGAGCAGCAGCAGAGGGAG
GCTGAACGCAAGCCCCAGAAAGAGCAAGCAAGAGTGGGAGCGGAAACAGAGAGAACTGC
AAGAGCAAGAAATGGAAAGCAGCTGAGTTGGAGAAACGCTTGGAGAAACAGAGAGAG
CTGGAGAGACAGCGGAGGAAAGAGAGCAAGAGGATAGAAAGCAGAGAGCAGCA
AACAGGAGCTTCAGACACAACGCGCTTTAGAAATGGAAAGACTCCGTCGGCAGGAGCTGC
TCAGTCAGAAAGACCAGGCAACAAAGAGACATTGTCAGGCTGAGCTCCAGAAAGAAAAGT
CTCCACCTCGAACTGGAAAGCAGTGAATCGAAACATCACAGATCTCAGGCAGACTACAA
GATGTCCAAATCAGAAAGCAAAACACAAAGACTGAGCTAGAACTTTGGATAAACAGTGT
GACCTGGAAATATGGAAATCAAAACAACTTCAACAAGAGCTTAAGGAATATCAAAATAAG
CTTATCTATCTGGTCCCTGAGAAAGCAGCTATTAACGAAAGAAATTAACATGACGCTCA
GTAACACACCTGATTCAGGATCAGTTTACTTCATAAAAAGTCAAGAAAAGGAAAGAT
TATGCCAAAGACTTAAAGAACAAATACATGCTCTTGAAGAAAGAACTGCATCTAAGCTCT
CAGAAATGGAATTCATTTAACAATCAGCTGAAGGAACTCAGAGAAAGCTATAATACACAGC
AGTLAGCCCTTGAACAATTCTATAAAATCAACCTGACAAATTTGAAGGAAATCGAAAGAA
AAAGATTAGCCAAAAA

FIG. 2A

ATGGCAGTGACATTCACCATCATGGGAACCACTTCCCTTTTCTTCAGGATTCTCTGTAGTG
GAAGAGAGCAGCCAGTGTGGGCTGAAAACATCTGAAAGTAGGGAGAAGAACCTAAAAT
AATCAGTATCTCAGAGGGCTCTAAGGTGCCAAGAAGTCTCACTGGACATTTAAGTGCCAA
CAAAGGCATCTTTGCGAATCGCCAAGTCAAACTTTCTAACTTCTGTCTCTCAGAGAC
AAGTGAGACTCAAGAGTCTACTGCTTTAGTGGCAACTACAGAAAAGTGGTGTACCCAGA
AAACAGGAGCAATTAGAAATGGTTCCAATATTTCAAAGCTCCGCAACAGGATGTGCTT
TCCTTTGCCCATTTAGGGTTTCTTCTCTTCTTTCTTTATTAACTTA

FIG. 2B

ATATCTAGAAGTCTGGAGTGAGCAACAAGAGCAAGAAACAAAAAGAAGCCAAAAGCAG
AAGGCTCCAATATGAACAAGATAAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAAT
AATTCATGTGAACTAGACAAGTGTGTTAAGAGTGATAAGTAAAAATGCACGTGGAGACAAG
TGCATCCCCAGATCTCAGGGACCTCCCCCTGCCTGTACCTGGGGAGTGAGAGGACAGGAT
AGTGCATGTTCTTTGTCTCTGAATTTTATGTTATATGTGCTGTAATGTTGCTCTGAGGAAGC
CCCTGGAAAGTCTATCCCAACATATCCACATCTTATATTCACAAAATTAAGCTGTAGTATG
TACCCTAAGACGCTGCTAAATTGACTGCCACTTCGCAACTCAGGGGGGGCTGCATTTTAGTA
ATGGGTCAAATGATTCACTTTTATGATGCTTCCAAAGGTGCCTTGGCTTCTCTTCCCACT
GACAAATGCCAAAGTTGAGAAAAATGATCATAAATTTAGCATAAACAGAGCAGTCGGCGGA
CACCGATTTTATAAAATAAACTGAGCACCTTCTTTTAAACAAACAAATGCGGGTTTATTTCT
CAGATGATGTTCAATCCGTGAATGGTCCAGGGGAAGGACCTTTCACCTTGACTATAAGGCATT
ATGTCATCACAAAGCTCTGAGGCTTCTCCTTTCCATCCTGCGTGGACAGCTAAGACCTCAGT
TTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTTGCCCCCATCTCCGGGG
GAATGTCTGAAGACAAATTTGTTACCTCAATGAGGGAGTGGAGGAGGATACAGTGCTACT
ACCAACTAGTGGATAAAGGCCAGGGATGCTGCTCAACCTCCTACCATGTACAGGACGTCTC
CCCATTACAACCTACCCAATCCGAAGTGTCAACTGTGTCAGGACTAAGAAACCCCTGGTTTTG
AGTAGAAAAGGGCCTGCAAAGAGGGGAGCCAAACAAATCTGTCTGCTTCTCATTAGTC
ATTGGCAAATAAGCAATTCTGTCTCTTTGGCTGCTGCTCAGCACAGAGAGCCAGAACTCTA
TCGGGCACCAAGGATAACATCTCTCAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCT
GATGGGATTATCTTCAGCTTGTGAGCTTCTAAGTTTCTTCCCTTCATTCTACCCCTGC.AAG
CCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTCAGGTTTTCTTACTCTGAATTTAGATC
TCCAGACCCCTTCTGGCCACAAATCAAAATTAAGGCAACAAACATATACCTTCCATGAAGCA
CACACAGACTTTTGAAAGCAAGGACAATGACTGCTTGAAATGAGGCCTTGAGGAATGAAG
CTTTGAAGGAAAAAGAACTTTTGTTCAGCCCCCTTCCACACTCTTCATGTGTTAACCAC
TGCTTCTGAGACCTTGGAGCCACGGTGACTGTATTACATGTTGTTATAGAAAACTGATTTT
AGAGTTCTGATCGTTCAAGAGAAATGAATTAATATACATTTCTA

FIG. 2C

Unit	Module 1	Exp.	Module 2	Unit / Item	Folio/Wall	Module 1	A2	Module 2	A2
1-7	100A Overly Tunnel	100	212A Deviation Cells	42240008 (420)	421G0196 (C-11)	2303	13.7	50	1430
1-8	110A Overly Tunnel	110	S7 Overly H	42240008 (420)	421G0196 (C-11)	355	2.7	54	302
1-9	201A Overly Tunnel	201	S10 Skipped Anomaly H	42240008 (420)	421G0196 (C-11)	1290	6.0	51	707
1-10	204A Overly Tunnel	204	S2 Punctures H	42240008 (420)	421G0196 (C-11)	9500	44.0	62	1100
1-11	306A	306	S40	42240008 (420)	421G0196 (C-11)	510	3.8	50	819
1-12	205A Overly Tunnel	205	C15 Hunt H	42240008 (420)	421G0196 (C-11)	2305	14.0	53	409
1-13	S25 Overly Tunnel	S25	C14 Three Minutes H	42240008 (420)	421G0196 (C-11)	531	3.5	53	743
1-14	301A	301	H	42240008 (420)	421G0196 (C-11)	1042	10.6	39	671
1-15	S22 Overly Tunnel	S22	C10 Highway H	42240008 (420)	421G0196 (C-11)	453	3.3	68	857
1-16	900B L-P	900	900B S-P	42240008 (420)	421G0196 (C-11)	1002	12.2	57	504
1-17	202A Overly Tunnel	202	T00A Lamp Indicator H	42240008 (420)	421G0196 (C-11)	1406	7.5	55	865
1-18	S115	S115	C110	42240008 (420)	421G0196 (C-11)	500	3.4	51	573
1-19	208A Overly Tunnel	208	C112 Tunnel H	42240008 (420)	421G0196 (C-11)	700	4.5	54	851
1-20	201A Overly Tunnel	201	S8 Strands N	42240008 (420)	421G0196 (C-11)	625	4.6	46	1335
1-21	S23 Overly Tunnel	S23	S56 Signal Circuit H	42240008 (420)	421G0196 (C-11)	3006	22.2	50	502
1-22	205A	205	T00A	42240008 (420)	421G0196 (C-11)	2251	14.7	46	1256
1-23	9134	9134	I2	42240008 (420)	421G0196 (C-11)	552	3.4	72	1028
1-24	303A Overly T	303	S01 Refill Issue	42240008 (420)	421G0196 (C-11)	8126	35.6	50	1449
1-25	203A Overly Tunnel	203	S73 Chassis H	42240008 (420)	421G0196 (C-11)	439	3.2	61	1531
1-26	302A	302	C11H	42240008 (420)	421G0196 (C-11)	307	3.2	50	1220
1-27	206A	206	S27	42240008 (420)	421G0196 (C-11)	4242	22.2	58	893

FIG. 3

TCGAGCGGCCCGCCGGGCAGGTCCTTCAGACTTGGACTGTGTCACACTGCCAGGCTTCCAG
GGCTCCAACTTGCAGACGGCCTGTTGTGGGACAGTCTCTGTAATCGCGAAAGCAACCATG
GAAGACCTGGGGGAAAACACCATGGTTTTATCCACCCTGAGATCTTTGAACAACTTCATCT
CTCAGCGTGCGAGGGAGGCTCTGGACTGGATATTTCTACCTCGGCCGCGACCACGCT

FIG. 4

TAGCGYGGTCGCGGCCGAGGYCTGCTTYTCTGTCCAGCCCAGGGCCTGTGGGGTCAGGGC
GGTGGGTGCAGATGGCATCCACTCCGGTGGCTTCCCATCTTTCTCTGGCCTGAGCAAGGT
CAGCCTGCAGCCAGAGTACAGAGGGCCAACTGCTGTTCTTGAACAAGGGCCTTAGCAG
GCCCTGAAGGRCCCTCTCTGTAGTGTGAACTTCTGGAGCCAGGCCACATGTTCTCCTCAT
ACCGCAGGYTAGYGATGGTGAAGTTGAGGGTGAATAGTATTMANGRAGATGGCTGGCA
RACCTGCCCGGGCGGCCGCTCSAAATCC

FIG. 5

AGCGTGGTCGCGGCCGAGGTGTCCTTCAGGGTCTGCTTATGCCCTTGTTCAAGAACCACAG
TGTCAGCTCTCTGTACTCTGGTTGCAGACTGACCTTGCTCAGGCCTGAGAAGGATGGGGCA
GCCACCAGAGTGGATGCTGTCTGCACCCATCGTCTGACCCCAAAGCCCTGGACTGGACA
GAGAGCGGCTGTACTGGAAGCTGAGCCAGCTGACCCACGGCATCACTGAGCTGGGGCCCT
ACACCCTGGACAGGGACAGTCTCTATGTCAATGGTTTCACCCATCGGAGCTCTGTACCCAC
CACCAGCACCGGGGTGGTCAGCGAGGAGCCATTCAACCTGCCCGGGCGGCCGCTCGA

FIG. 6

A TTGGGGNTTTMGAGCGGGCGCCCGGGCAGGTACCGGGGTGGTCAGCGAGGAGCCATTAC
ACTGAACTTCACCATCAACAACCTGCGGTATGAGGAGAAATGCCAGCACCCCTGGCTCCAG
GAAGTTCAACACCACGGAGAGGGTCTTCAGGGCCTGCTCAGGTCCCTGTTCAAGAGCAC
CAGTGTGGGCTCTGTACTCTGGCTGCAGACTGACTTTGCTCAGACTTGAGAAACATGGG
GCAGCCACTGGAGTGGACGCCATCTGCACCTCCGCTTGATCCCACTGGTCTGGACTGG
ACAGAGAGCGGCTATACTGGGAGCTGAGCCAGTCTCTGGCGGNGACNCCNCTT

B AGCGTGGTCGCGGGCGAGGTCCAGTCCAGCATGCTCTTTCTCCTGCCCACTGGCACAGTG
AGGAAGATCTCTGCTGTCACTGAGAAGCTGTATCCACTGAGATGGCAGTCAAAAGTGC
ATTTAATACACCTAACGTATCGAACATCATAGCTTGGCCCAAGGTTATCTCATATGTGCTCA
GAACACTTACAATAGCCTGCAGACCTGCCCGGGCGGCGGCTCGA

FIG. 7A and 7B

TGTGGTGTGAACTTCCTGGAGNCAGGGTGACCCATGTCCTCCCCATACTGCAGGTTGGTG
ATGGTGAAGTTGAGGGTGAATGGTACCAGCAGAGGGCCAGCAGCCATAATTGTSGRGCKG
SMGMSSGAGGMWGGWGTYYCWGAGGTTCYRARRTCCACTGTGGAGGTCCCAGGAGTGCT
GGTGGTGGGGACAGAGSTCYGATGGGTGAAACCAATTGACATAGAGACTGTTCTGTCCAG
GGTGTAGGGGGCCAGCTCTTYRATGYCATTGGYCAGTTKGCTYAGCTCCCAGTACAGCCRC
TCTCKYYGMGWCCAGSGCTTTTGGGGTCAAGATGATGGATGCAGATGGCATCCACTCCA
GTGGCTGCTCCATCCTTCTCGGACCTGAGAGAGGTCAGTCTGCAGCCAGAGTACAGAGGG
CCAACACTGGTGTCTTTGAATA

FIG. 8

TCGAGCGGCCGCGGGCAGGTCAGGAAGCACATTGGTCTTAGAGCCACTGCCTCCTGGA
TTCCACCTGTGCTGCCGACATCTCCAGGGAGTGCAGAAGGGAAGCAGGTCAAACCTGCTCA
GATCAGTCAGACTGGCTGTTCTCAGTTCTCACCTGAGCAAGGTCAGTCTGCAGCCAGAGTA
CAGAGGGCCA*CACTGGTGTCTTGAAACAAGGGCTTGAGCAGACCTGCAGAACCCTCTTC
CGTGGTGTGAACTTCCTGGAAACCAGGGTGTGCATGTTTTCTCATAATGCAAGGTTG
GTGATGG

FIG. 9

Gene Name	Bal Probe 1 Exp Name	P1	P2	Probe 3 Name	GK ID	Probe1 Value	Probe2 Value	Probe1 B/B	Probe2 B/B	A%	A%	
42100188 (10)	070 305A Ovary T	10	10	270A Uterus N	4.2E+06	8620	1240	57.7	65	2.2	65	
42100188 (10)	059 521A Ovary Tumor	10	10	530A Spleen Caud N	4.2E+06	5891	1002	35.3	89	3.9	89	
42100188 (10)	052 465A Ovary T	10	10	591A Pect Gland	4.2E+06	12151	2121	56.4	71	2.8	71	
42100188 (10)	055 361A Ovary Tumor	10	10	415A Aorta N	4.2E+06	7487	1480	53.0	71	9.7	71	
42100188 (10)	013 181A Ovary T Tumor	10	10	571A Breast N	1.2E+06	7002	2116	39.2	81	4.5	81	
42100188 (10)	010 9111 Ovary T Tumor	10	10	11 Cytom N	4.2E+06	3711	1113	20.4	81	2.6	81	
42100188 (10)	026 181A Ovary T Tumor	10	10	12 Cytom N	4.2E+06	2115	814	12.1	75	2.1	75	
42100188 (10)	023 361A Ovary Tumor	10	10	272A Dendritic cells	4.2E+06	4578	1754	25.0	69	2.1	69	
42100188 (10)	010 301A Ovary T	10	10	55 Pantoic acid N	4.2E+06	7901	1596	18.5	81	5.6	81	
42100188 (10)	010 5115 Ovary T Tumor	10	10	510 THMC Tactival	1.2E+06	2191	1081	14.0	90	2.9	90	
42100188 (10)	010 605A Ovary Tumor	10	10	4110 Spleen macro	1.2E+06	1979	974	10.4	80	2.7	80	
42100188 (10)	010 415A Ovary Tumor	10	10	075 Heart N	4.2E+06	1911	964	13.9	91	3.4	91	
42100188 (10)	016 49A Ovary T Tumor	10	10	52 Ovary N	4.2E+06	1666	817	9.8	100	1.0	100	
42100188 (10)	016 261A Ovary T Tumor	10	10	210A Esophagus N	1.2E+06	1827	1180	13.4	97	9.5	97	
42100188 (10)	016 522A Ovary T	10	10	510 Spleen macro	1.2E+06	5914	3651	30.4	86	6.0	86	
42100188 (10)	014 9185 1 Ovary T (5	10	10	57 Ovary N	4.2E+06	3009	1274	11.9	80	2.6	80	
42100188 (10)	014 261A Ovary Tumor	10	10	079 Kidney N	4.2E+06	1706	1072	11.0	92	4.0	92	
42100188 (10)	014 525 Ovary Tumor	10	10	9185 5 Ovary T (5	4.2E+06	4201	3074	24.0	91	2.7	91	
42100188 (10)	012 429A Ovary Tumor	10	10	111A Esophagus	1.2E+06	3002	2101	16.6	89	4.0	89	
42100188 (10)	012 187A Ovary T	10	10	071 Bone Marrow	4.2E+06	1611	1297	9.6	90	3.1	90	
42100188 (10)	012 288A Ovary Tumor	10	10	0719 Brain N	4.2E+06	2521	2084	22.0	65	21.9	65	
42100188 (10)	011 201A Ovary Tumor	10	10	0712 Lung N	4.2E+06	1840	1474	10.7	88	2.3	88	
				Stomach N	4.2E+06	1329	1204	9.1	87	3.8	87	
											3.5	90

FIG. 10

Gene Name	Bal Probe 1		P1	Probe 2		OZH ID	Probe1		Probe2		Probe1		Probe2	
	Exp Name	Exp Name		P2 Name	P2 Name		Value	At	Value	At	B/B	At	B/B	At
42100181 (C4)	118.8 365A Ovary T	118.8 365A Ovary T	118.8 365A Ovary T	391 Fetal tissue	391 Fetal tissue	422X0607	26711	1424	103.3	54	2.0	54	2.0	54
42100181 (C4)	111.5 523 Ovary Tumor	111.5 523 Ovary Tumor	111.5 523 Ovary Tumor	556 Spinal Cord N	556 Spinal Cord N	422X0628	13559	1179	65.3	68	3.9	68	3.9	68
42100181 (C4)	111.1 466A Ovary T (tact)	111.1 466A Ovary T (tact)	111.1 466A Ovary T (tact)	415A Aorta H	415A Aorta H	422X0611	14125	1271	62.3	61	5.6	61	5.6	61
42100181 (C4)	100.8 305A Ovary T	100.8 305A Ovary T	100.8 305A Ovary T	200A Liver H	200A Liver H	422X0606	16121	1488	91.1	41	2.1	41	2.1	41
42100181 (C4)	101 261A Ovary Tumor	101 261A Ovary Tumor	101 261A Ovary Tumor	573 Bilect N	573 Bilect N	42210623	11126	2245	58.2	68	4.4	68	4.4	68
42100181 (C4)	146 064A Ovary T (tact)	146 064A Ovary T (tact)	146 064A Ovary T (tact)	272A Endothelial cells	272A Endothelial cells	422X0608	6583	1424	24.5	40	2.1	40	2.1	40
42100181 (C4)	144 261A Ovary Tumor	144 261A Ovary Tumor	144 261A Ovary Tumor	52 Pancreas H	52 Pancreas H	422X0629	9863	2245	40.9	64	3.6	64	3.6	64
42100181 (C4)	144 499A Ovary T (tact)	144 499A Ovary T (tact)	144 499A Ovary T (tact)	161A Ovary N	161A Ovary N	42210614	2801	648	22.6	60	1.4	60	1.4	60
42100181 (C4)	142 261A Ovary Tumor	142 261A Ovary Tumor	142 261A Ovary Tumor	510 Skeletal muscle	510 Skeletal muscle	42210611	8271	1949	19.5	68	3.6	68	3.6	68
42100181 (C4)	138 511S Ovary T (tact)	138 511S Ovary T (tact)	138 511S Ovary T (tact)	C7110 Small intestine	C7110 Small intestine	42210611	2281	407	11.6	60	2.1	60	2.1	60
42100181 (C4)	125 265A Ovary Tumor	125 265A Ovary Tumor	125 265A Ovary Tumor	C75 Heart H	C75 Heart H	42210624	3192	1291	19.2	68	4.0	68	4.0	68
42100181 (C4)	124 572 Ovary T	124 572 Ovary T	124 572 Ovary T	C79 Kidney H	C79 Kidney H	42210627	565	1276	3.6	70	3.9	70	3.9	70
42100181 (C4)	124 9111 Ovary T (SH)	124 9111 Ovary T (SH)	124 9111 Ovary T (SH)	572 Ovary H	572 Ovary H	42210627	2771	1260	14.1	46	2.1	46	2.1	46
42100181 (C4)	119 948S 1 P Ovary T C	119 948S 1 P Ovary T C	119 948S 1 P Ovary T C	153m H	153m H	42210601	1774	847	8.4	56	2.1	56	2.1	56
42100181 (C4)	116 362A Ovary T	116 362A Ovary T	116 362A Ovary T	948S 1 P Ovary T C	948S 1 P Ovary T C	42210602	6967	3726	41.5	70	9.2	70	9.2	70
42100181 (C4)	116 268A Ovary Tumor	116 268A Ovary Tumor	116 268A Ovary Tumor	C7119 Brain N	C7119 Brain N	42210610	2111	1471	6.2	50	1.9	50	1.9	50
42100181 (C4)	115 525 Ovary Tumor	115 525 Ovary Tumor	115 525 Ovary Tumor	C712 Lung H	C712 Lung H	422X0625	1657	1054	9.7	69	2.9	69	2.9	69
42100181 (C4)	114 262A Ovary Tumor	114 262A Ovary Tumor	114 262A Ovary Tumor	C711 Bone Marrow	C711 Bone Marrow	42210619	848	1241	4.5	65	2.7	65	2.7	65
42100181 (C4)	112 086A Ovary T	112 086A Ovary T	112 086A Ovary T	511A Large intestine	511A Large intestine	42210622	3171	2214	16.8	69	3.8	69	3.8	69
42100181 (C4)	112 115A Ovary Tumor	112 115A Ovary Tumor	112 115A Ovary Tumor	510 PHM Tactile	510 PHM Tactile	42210605	640	544	4.2	54	1.9	54	1.9	54
42100181 (C4)	110 201A Ovary Tumor	110 201A Ovary Tumor	110 201A Ovary Tumor	57 Ovary N	57 Ovary N	42210626	592	740	3.7	75	2.6	75	2.6	75
42100181 (C4)	110 426A Ovary T (tact)	110 426A Ovary T (tact)	110 426A Ovary T (tact)	56 Stomach H	56 Stomach H	422X0620	1197	1217	7.8	65	3.5	65	3.5	65
42100181 (C4)	93A Ovary T (tact)	93A Ovary T (tact)	93A Ovary T (tact)	241A Esophagus H	241A Esophagus H	42210612	283	797	4.5	95	2.4	95	2.4	95
				11 Colon H	11 Colon H	42210609	3170	802	8.9	24	1.7	24	1.7	24

FIG. 11

Gene Name	Bal Probe 1		P1	P2 Name	QEM ID	Probe1		Probe2		B/B	A%
	Exp Name	Value				B/B	Value				
421V00189 [001]	11.2	426A Ovary T (tue)	11.2	426A Ovary T	423X06.11	8072	55.2	243	2.4	67	67
421V00189 [001]	11.2	523 Ovary T (tue)	11.2	523 Ovary T	422Y06.28	7167	42.6	517	2.5	69	69
421V00189 [001]	11.2	429A Ovary T (tue)	11.2	429A Ovary T	422X06.41	2850	21.7	227	3.5	64	64
421V00189 [001]	11.2	485A Ovary T	11.2	485A Ovary T	422X06.07	11711	54.0	1469	2.2	58	58
421V00189 [001]	11.2	423A Ovary T	11.2	423A Ovary T	422Y06.23	6949	37.8	952	2.0	69	69
421V00189 [001]	11.2	525 Ovary T	11.2	525 Ovary T	422Y06.09	208	2.1	1210	2.1	44	44
421V00189 [001]	11.2	405A Ovary T	11.2	405A Ovary T	422Y06.06	8676	52.3	1717	2.6	57	57
421V00189 [001]	11.2	461A Ovary T (tue)	11.2	461A Ovary T	422Y06.09	1449	17.4	707	2.0	57	57
421V00189 [001]	11.2	461A Ovary T	11.2	461A Ovary T	422Y06.24	6312	29.1	1431	2.9	77	77
421V00189 [001]	11.2	461A Ovary T	11.2	461A Ovary T	422Y06.30	7612	38.4	1809	3.3	79	79
421V00189 [001]	11.2	402A Ovary T	11.2	402A Ovary T	422Y06.04	468	1.4	1508	2.3	60	60
421V00189 [001]	11.2	5115 Ovary T (tue)	11.2	5115 Ovary T	422Y06.01	2500	12.1	860	2.1	51	51
421V00189 [001]	11.2	465A Ovary T	11.2	465A Ovary T	422Y06.04	1434	6.7	569	2.1	61	61
421V00189 [001]	11.2	461A Ovary T (tue)	11.2	461A Ovary T	422Y06.06	1712	11.8	723	2.8	70	70
421V00189 [001]	11.2	461A Ovary T	11.2	461A Ovary T	422Y06.08	4083	13.2	1112	2.0	62	62
421V00189 [001]	11.2	461A Ovary T	11.2	461A Ovary T	422Y06.11	1301	8.0	732	2.0	47	47
421V00189 [001]	11.2	461A Ovary T	11.2	461A Ovary T	422Y06.15	3071	2.6	580	2.0	41	41
421V00189 [001]	11.2	461A Ovary T	11.2	461A Ovary T	422Y06.22	2097	11.2	1202	2.7	86	86
421V00189 [001]	11.2	461A Ovary T	11.2	461A Ovary T	422Y06.26	474	2.9	470	2.9	47	47
421V00189 [001]	11.2	461A Ovary T	11.2	461A Ovary T	422Y06.25	969	5.6	1094	2.9	72	72
421V00189 [001]	11.2	461A Ovary T	11.2	461A Ovary T	422Y06.30	750	5.6	672	2.4	62	62
421V00189 [001]	11.2	461A Ovary T	11.2	461A Ovary T	422Y06.12	498	4.2	446	2.1	73	73
421V00189 [001]	11.2	461A Ovary T	11.2	461A Ovary T	422Y06.02	3117	16.7	3174	8.2	91	91
421V00189 [001]	11.2	461A Ovary T	11.2	461A Ovary T	422Y06.27	224	2.3	409	2.3	48	48

FIG. 13

Gene Name	Exp Name	Probe 1	Probe 2	Probe 3	Probe 1 Value	Probe 2 Value	Probe 1 B/B	Probe 2 B/B	Probe 1 AS	Probe 2 AS
42100187 (E11)	20.2 426A Ovary Tumor	42100187	42100187	42100187	5441	270	36.3	2.4	50	50
42100187 (E11)	10.0 521 Ovary Tumor	42100187	42100187	42100187	5118	533	27.1	2.4	56	56
42100187 (E11)	18.1 496A Ovary Tumor	42100187	42100187	42100187	1252	130	10.1	2.5	38	38
42100187 (E11)	15.7 455A Ovary Tumor	42100187	42100187	42100187	9307	1648	15.8	4.5	45	45
42100187 (E11)	14.4 405A Ovary Tumor	42100187	42100187	42100187	5456	1235	31.4	2.0	50	50
42100187 (E11)	13.2 365A Ovary Tumor	42100187	42100187	42100187	1834	448	11.9	4.8	48	48
42100187 (E11)	11.1 387A Ovary Tumor	42100187	42100187	42100187	109	1259	2.6	4.8	48	48
42100187 (E11)	11.6 361A Ovary Tumor	42100187	42100187	42100187	1715	1036	17.7	5.5	55	55
42100187 (E11)	13.1 361A Ovary Tumor	42100187	42100187	42100187	4164	1219	23.0	6.2	62	62
42100187 (E11)	13.5 317A Ovary Tumor	42100187	42100187	42100187	1365	627	6.8	4.7	47	47
42100187 (E11)	13.1 361A Ovary Tumor	42100187	42100187	42100187	1355	1640	14.9	6.0	60	60
42100187 (E11)	13.1 361A Ovary Tumor	42100187	42100187	42100187	2667	1240	13.4	4.1	41	41
42100187 (E11)	13.1 361A Ovary Tumor	42100187	42100187	42100187	291	605	2.4	2.5	31	31
42100187 (E11)	13.1 361A Ovary Tumor	42100187	42100187	42100187	4104	687	3.2	4.7	47	47
42100187 (E11)	13.1 361A Ovary Tumor	42100187	42100187	42100187	1622	984	7.9	4.4	44	44
42100187 (E11)	13.1 361A Ovary Tumor	42100187	42100187	42100187	1892	1245	10.4	5.0	50	50
42100187 (E11)	13.1 361A Ovary Tumor	42100187	42100187	42100187	604	908	4.1	6.2	62	62
42100187 (E11)	13.1 361A Ovary Tumor	42100187	42100187	42100187	216	325	2.7	7.8	7.8	7.8
42100187 (E11)	13.1 361A Ovary Tumor	42100187	42100187	42100187	182	501	2.9	5.8	5.8	5.8
42100187 (E11)	13.1 361A Ovary Tumor	42100187	42100187	42100187	558	677	4.2	5.8	5.8	5.8
42100187 (E11)	13.1 361A Ovary Tumor	42100187	42100187	42100187	2582	2493	15.1	5.7	5.7	5.7
42100187 (E11)	13.1 361A Ovary Tumor	42100187	42100187	42100187	2261	362	12.5	4.8	4.8	4.8
42100187 (E11)	13.1 361A Ovary Tumor	42100187	42100187	42100187	1749	965	9.7	3.6	3.6	3.6
42100187 (E11)	13.1 361A Ovary Tumor	42100187	42100187	42100187	283	845	2.2	2.2	2.2	2.2

FIG. 14

11721-1

ACGGTTTCAATGGACACTTTTATTGTTTACTTAATGGATCATCAATTTTGTCTCACTACCTA
CAAATGGAAATTTTCATCTTGTTCATGCTGAGTAGTGAAACAGTGACAAAGCTAATCATAA
TAACCTACATCAAAAGAGAACTAAGCTAACACTGCTCACTTTCTTTTAACAGGCAAAATA
TAAATATATGCACTCTAXAATGCAACATGGTTTACTCACTAAAAAATCAAATGGGATCTT
GAAGAATGTATGCCAAATCCAGGGTGCACTGAAGATGAGCTGAGATGCTGTGCAACTGTTT
AAGGGTTCCTGGCACTGCACTCTTGGCCACTAGCTGAATCTTGACATGGAAGGTTTAGC
TAATGCCAAGTGGAGATGCAAGAAATGCTAAGTTGACTTAGGGGCTGTGCACAGGAACTA
AAAGGCAGGAAAGTACTAAATATTGCTGAGAGCATCCACCCAGGAAGGACTTTACCTTC
CAGGAGCTCCAAACTGGCACCACCCCACTGCTCACATGGCTGACTTTATCCTCCGTGTTT
CATTTGGACAGCAAGTGGCAGT

11721-2

AAGGCTGGTGGGTTTTTGATCCTGCTGGAGAACCTCCGCTTTCATGTGGAGGAAGAAGGG
AAGGGAAAAGATGCTTCTGGGAACAAGGTTAAAGCCGAGCCAGCCAAAAATAGAACTTTC
CGAGCTTCACTTTCCAAGCTAGGGGATGTCTATGTCAATGATGCTTTTGGCACTGCTCACA
GAGCCACAGCTCCATGGT.AGGAGTCAATCTGCCACAGAAGGCTGGTGGGTTTTTGATGA
AGAAGGAGCTGAACCTACTTTGCAAGGCCCTTGGAGAGCCAGAGCGACCCTTCTGGCCA
TCCTGGGCGGAGCTAAAGTTGACACAAGATCCAGCTCATCAATAATATGCTGGACAAAG
TCAATGAGATGATTATTGGTGGTGAATGGCTTTTACCTTCCCTAAGGTGCTCAACAACAT
GGACATTGGCACTTCTCTGTTTATGAAAGACCGAGCCAAAGATTGTCAAGACCTAATGTCC
AAAGCTGACAAAGAATGCTGTCAAGATTACCTTCCCTGTTGACTTTGTCACTGCTGACAAGT
TTGATGA

11721-1

TTTGTTCCTTACATTTTCTAAGAGCTTACTTAAATCAGTCAACTGGTCTTTGAGACTCTTA
AGTTCTGATTTCAACTTACCTAATTCATTTCTGAGAACTGTGGTATAGGTGGCGTGTCTCTTC
TAGCTGGGACAAAAAGTTCTTTGTTTTCCCTGTAGAGTATCACAGACCTTCTGCTGAAGC
TGGACCTCTGTCTGGCCCTTGGCACTCCCAATCTGCTTGTGATGTTCAAGCCTGGAAATGTT
AATCTTTAAATCTTCCATATGGATGGACATCTGCTAAGTTGATCCTTAGAACACTGCAAT
TATCTTCTTTGAGTCTAATTTCTTCTTCTTCTTCTTGAATCCCATCACTAAACTTCTCTCCC
ATTTCTTAGCTTCACTATCACCTGTGACGATCATCTGGAGGGAAGACATGCTCTTAGTA
AAGGCTGCAAGCTGGTCACTACTGTCCAAAGTTTCTCTGAAGTTGCTGAACCTTCTTGT
CTTCTTGTTCAAAGTAACCTGAATCTCTCCAAATGCTCTTCCAAAGTGGACTTTTCTCTGC
GCAAGCATCCAG

11721-2

TCATTGCTGTGATGGCATCTGGAATGTCATGAGCAGCCACGAAGTTGTAGATTTCATTCA
ATCAAAGGATTCAGCATGTGGTGGAACTGTGAGGCAAGAGAAACAAAGAACTGTATGGCA
AGTTAAGAAAGCAGAGGCAAAACAAAGAGGAGACAGAAAGCAGTTGCAAGGAAGCTGAG
CAAGAAATGGAGGAAATCAAGAAAGATGAGAAAGTTTGCTAAATCTAAACAGCAGAA
AATCCTAGAGCTGGAAGAAGAGAAATGACCGCTTAGGGCAGAGGTGCACCTGCAAGGAG
ATACAGCTAAAGAGTGTATGGAACACTTCTTCTTCCAATGCCACCATGAAGGAAGAAC
TTGAAGGGTCAAAATGGAGTATGAACCTTCTAAGAAAGTTTCACTCTTTAATGTCTGA
GAAAGACTCTCAAGTGAAGAGGTTCAAGATTAAAGCATCAGATAGAAGGTAATGTATC
TAAACAAGCTAACCTAGAGGCCACCGAGAAACATGATAACCAACGAATGTCACTGAAGA
GGGAACACAGTCTATACCAGT

FIG. 15A

[illegible]

CAAGCTTTTTTTTTTTTAAAAAGTGTAGCAATTAATGTTTTATTGTCACGCAGATGGCA
ACTGGGTTTATGCTTCATATTTTATTTTTGTAAATTAACAAAGTTTAAATA
GCCAATGGCTGGTTATATTTTCAGAAAACATGATTAGACTAATTCATTAATGGTGGCTTCA
AGCTTTCTCTTATCGGCTCAGAAAATTCACCCACCTTTTGCCCTTCTTAAAAAACTGGAA
TGTGGCATGCATTTGACTTGCACCTGTGAAACCAACTCTGCACAGTCAATCCATCTACTT
CAAGGAATATCAGCTTGGAAATACTTTTCAGAGCGGAATGAAAGCAAGGCTTGATCATTT
TGC.AAGGCCACACAGCTGGCTGAGAACTCACTACTACAAGTTTATCACTCGCAGCGGT
CAAGGCTTCTGCAAAAGCACTTGGCTTGTGATTCGCTTACCATCTTGGCTCTGGAGTCT
GACGACGGCTGTAAAGCAAGCATGTCAAAATGGATCCAAAGCAGCAAAACAGAGCTTCAAGA
CTCGCTGCTTGGCTTCAATTCGGATCCGATATCGCCATGGCCCT

AAGTGTAGCATTAAATGTTTATGTGCACGCAGATGGCAACTGGGTTTATGCTTTCATATT
 TATATTTTGTAAATAAAAAAATTCACAGTTTAAATAGCCAAATGGCTGTTATATTTTC
 AGAAAACATGATAGACTATATTCATTAATGGTGCGCTCAAGCTTTCCATTATGGCTCCAG
 AAAATTCACCCACCTTTGTGCGTTTATAAAAACTGGAAATGTTGGCATGCAATTCATCTCA
 CACTGTGAAGCAACATCTGTACAGTCAATCCACATCTACTTCAAGGAATACAGCTTGGAAAT
 ACTTTTCAGACAGCGGAATCAAGAAAGGCTTGAATTTTCCAAGGCCACACCCACGTGG
 CTGACAGTCTCAACTACTACAGTTTATACGCTCAAGCGCTCCAAAGGCTTCTGAAAAGCAGT
 CTGCTCTCGATCTGCTTCACCATCTTGGCTGTGGAACTGTGACGACGCGGTGAAGGACC
 GATGGAAATGGATCCAAAGCAGCAACAGAGCTTCAAGACTCGCTGCTTGGCATGAATTC
 GGATCCCA

FIG. 15B

11738.1.40.19.19

TACAAACTTTATTGAAACGCACACGGCGCACACACAAACACCCCTGTGGATAGGGAAAA
GCACCTGGCCACAGGGTCCACTGAAACGGGGAGGGGATGGCAGCTTGTAAATGTGGCTTTT
GCCACAACCCCTTCTGACAGGGAAGGCCTTAGATTGAGGGCCACCTCCCATGGTGATGG
GGAGCTCAGAAATGGGGTCCAGGGAGAAATTTGGTTAGGGGGAGGTGCTAGGGAGGCATGA
GCAGAGGGCACCCCTCCGAGTGGGGTCCCGAGGGCTGCAGAGTCTTCAGTACTGTCCCTCAC
AGCAGCTGTCTCAAGGCTGGGTCCCTCAAAGGGGGCTCCAGCGGGGGCTCCCTGGCG
AAACACTTGGTACCCCTGGCTGGCAGCGGAAGCCAGCAGGACAGCAGTGGCGCCGATCA
GCACAACAGACGCCCTGGCGGTAGGGACAGCAGGCCAGCCCTGTGGGTTGTCTCGGCAG
CAGGTCTGGTTATCATGGCAGAAAGTGTCTTCCCACTTCACGTCCTTCACACGCCACGTG
AXGGCTACXGGCCAGGAAG

11738.2.40.19.19

CCCGTGGGTGCCATCCACGGAGTTGTACCTGATCTTTGGAAGCAGGATCGCCCGTCTGCA
CTGCAGTGGAAAGCCCGTGGGCAGCAGTGATGGCCATCCCCGCATGCCACGGCCTCTGGG
AAGGGGCAGCAACTGGAAGTCCCTGAGACGGTAAAGATGCAGGAGTGGCCGGCAGAGCA
GTGGGCATCAACCTGGCAGGGGCCACCCAGATGCCCTGCTCAGTGTGTGGGCCATTGTCC
AGAAGGGGACGGCAGCAGCTGTAGCTGGCTCCTCCGGGTCCAGGCCAGCAGGCCACAGGG
CAGAACTGACCATCTGGGCACCGCGTCCAGCCACCAGCCCTGTGTTAAGGCCACCCAGC
TCACCAGGGTCCACATGGTCTGCCCTCCGACTCCGGCTCCTTGGGCCCTGATGGTTT
TACCTGCTGTGAGCTGCCAGTGGCAAGTATGGCTGTGTCGAATGCCCAACGCCACCTGCT
GCTCCGATCACCTGCAGTGTGCCCAAGACACTGTGTGTGACCTGATCCAGAGTAAGTGC
CTCTCCAAGGAGAACG

11730-1

GAATCACCTTTCTGGTTAGCTAGTACTTGTACAGAAATAGAGTTTCCACACGGGAG
TCTCCCTGGGCTCTGTTTGGCTCTCGCTAAGGCAGGCCTACACCTTTCTCTCTCTATGG
AGAGGGGAATATGCCATTAAAGGTGAALAGTCACCTTCCAAAAGTGAGAAAGGGATTGATT
GCTGCTTCAGGACTGTGGAATTTTGAATGTTTACAAATGGTTGCTACAAAACAACA
AAAAGCTAATTACAAAATGTGTACATCAACAATGCTTTTAAAGACATTATGCATTGTGC
TCACATTCCTTAAATGTTGTTTCCAAAGGTGCTCAGCCTCTAGCCCAGCTGGATTCTCCGG
GAAGAGGCAGACACATTTGGCGAAAAGACACACGGCAAGGAGGGGGTGGTGAAGGA
GAAAGCAGCCCTCCAGTTAAAGATCAGCCCTCAGTTAAAGGTACGCTTCCCGCAAGCTGGC
CTCAXGGGGAGTCTGGGTACAGCGAGGAGCAGCAGCAGGGTGGGACTGGGGCGT

11730-2

AACCGGAGCGCGAGCAGTAGCTGGGTGGCCACCATGGCTGGGATCACCACCATCGAGCGG
GTGAAGCGCAAGATCCAGGTTCTGCAGCAGCAGGCAGATGATGCACAGGAGCGAGCTGA
GCGCCTCCAGCGAGAAGTTCAAGGAGAAAGCGCGCCCGGGAACAGGCTGAGGCTGAGG
TGGCCTCCTTGAAACCGTAGGATCCAGCTGGTTGAAGAAGAGCTGGACCGTGCTCAGGAGC
GCCTGGCCACTGCCCTGCAAAAGCTGGAAGAAGCTGAAAAGCTGCTGATGAGAGTGAGA
GAGGTATGAAGGTTATTGAAAACCGCCCTTAAAGATGAAGAAGAATGGAATCCAG
GAAATCCAACCTCAAGAAGCTAAGCACAATGCAGAAGAGGCAGATAGGAAGTATGAAGA
GGTGGCTCGTAAGTTGGTCAATTCAGCAGACTTGAACGCACAGAGGAACGACCTGA
GCTGCCAGAGTCCCGTTGCCAGAGATGGATGACCAGATTAGACTGATGGACCAGAACCT
GAAGTGTCTGAGTGC

FIG. 15C

11732.1contig

GAGAACTTGGCCTTTATTGTGGGCCCAGGAGGGCACAAAGGTCAGGAGGCCCAAGGGAGG
 GATCTGGTTTTCTGGATAGCCAGGTCTATGCATGGGTATCAGTAGGAAATCCGCTGTAGCTG
 CACAGGCCTCACTTGTCTGACAGTTCCGGGGAGAAACACCTGCCTGCATGGCGTTGATGACCT
 CGTGGTACACGACAGAGCCATTGGTGCAGTGCAAGGGCACGGCCATGGGCTCCGTCCTCG
 AGGGCAGGCAGCAGGAGCATTGCTCCTGCACATCCTCGATGTCAATGGAGTACACAGCTT
 TGCTGGCACACTTTCCCTGGCAGTAATGAATGTCCACTTCTCTGGGACTTACAATCTCCC
 ACTTTGATGTACTGCACCTTGGCTGTGATGTCTTTGCAATCAGGCTCCTCACATGTGTCA
 GCAGGTGCCTGGAATTTTCACGATTTTGCCTCCTCAGCCAGACACTTGTGTTCAATCAATG
 GTGGGACGCCGTGACCCTCTTCTCCAGATGTAATCTCTCT

11732.2contig

GCCTGGACCTTGCCGGATCAGTGCCACACAGTGACTTGGCTTGGCAAAATGGCCAGACCTTGC
 TGCAGAGTCACTGTCTCAATTGTGACCATGGACCCCGGCTTCAATGTGCCAACAGCCAGTC
 TCCTGTTCCGGGTGGAGGAGACGTGTGGCTGCCGCTGGACCTGCCCTTGTGTGTGACGGGC
 AGTTCCACTCGGCACATCGTCACCTTCGATGGGCAGAAATTTCAAGCTTACTGGTAGCTGCT
 CCTATGTCTCTTTCAAAACAAGGACGACGACCTGGAAGTCTCTCCACAATGGGGCCTG
 CAGCCCCGGGGCAAAACAAGCCTGCATGAAGTCCATTGAGATTAAGCATGCTGGCGTCTC
 TGCTGAGCTGCACAGTAACATGGAGATGGCAGTGGATGGGAGACTGGTCTTGGCCCGTA
 CGTTGCTGAAAACAATGCAAGTCACCATCTACGGCGCTATCATGTATGAAGTCAGGTTTACC
 CATCTTGGCCACATCCTCACATACACCGCCXCAAAACAACGAGTT

11735-1-2

AGATCAACCTCTGCTGGTCAGGAGGAATGCCCTTCTGTCTTGGATCTTTGCTTTGACGTTT
 TCGATAGTRWCACTKXRYTTRAMSKMAAGKGYRATGRWMITKSYWGWRA SYXTM/WWW
 RSGRARAYTTGACAYCCCMCCCTWJAGCQSAGNACCARGTGCAAgTGGGACTCTTTCTG
 GATGTTGTAGTCAGACAGGCTGCCCTCATCTCCAGCTGTTCCAGCAAAAGATCAACCTC
 TGCTGATCAGGAGGGAATGCCCTTCTTATCTTGGATCTTTGCCCTTGACATTCTCGATGGTGT
 ACTGGGCTCCACCTCGAGGCTGATGCTCTTACCAGTCAGGCTCTTACCGAACATYTGATC
 CCACCTCTGAGACGGAGCAACAGCTGCCAGGCTGACTCTTTCTGGATGTTGTAGTCAGACA
 CGGTGCCGYCCATCTTCCAGCTGCTTCCAGCAAAAGATCAACCTCTGCTGGTCAGGAGGRAT
 GCCTTCCCTTGTCTGTGATCTTTGCTTGGACRTCTCTCATGCTGCTACTCGGCTCCACTTGA
 GAGTGATGGTCTTACCAGTCAGGCTCTTACGAAGATCTCCATCCCACCTCTAA

11740.2contig

AAGTCACAAACAGACAAAGATTATACAGCTGCAAGCTATATTAGAAGCTGAACGAAGA
 GACAGAGGTGATGATTTCTGACATGATTGGACACCTTCAAGCTCGAATTACATCTTTACAAG
 AGCAGGTGAAGCATCTCAAAACATAATCTCGAAAAAGTGGAAAGGAGAAACAAAAGAGGCT
 CAAGACATGCTTAATCACTCAGAAAAAGCAAAAGAAATAATTAGACATAGATTTAACTAC
 AAATTTAAATCAATTACAACACGGTTAGAACAAAGAGGTAAATGAACACAAAGTAACCAAA
 GCTGCTTTAACTGACAAACAACAATCTATTGAAGAGGCAAAAGTCTGTGGCAATGTGTGAG
 ATGGAAAAAAGCTGAAAGAAAGAAAGACAAGCTCGAGAGAAGGCTGAAAAATCGGGTTGT
 TCAGATTGACAAACAGCTGTTCCATGCTAGACGTTGATCTGAAGCAATCTCAGCAGAACT
 AGAACATTTGACTCGAAATAAAGCAAGGATGGAGGATGAAGTTAAGAACTTA

FIG. 15D

11763.1&64.1.contig

CGCCTCCACCATGTCCATCAGGGTGACCCAGAACTCTACAAGGTGTCCACCTCTGGCCCC
 CGGGCTTCAAGCAGCCGCTCCTACAGAGTGGGCGCGTTCCCGCATCAGCTCCTCGAGCT
 TCTCCCGAGTGGGCAGCAGCAACTTTGCGGGTGGCTGGGCGGCGGCTATCGTGGGGCCA
 GCGGCAATGGGAGGCATCACCAGTTACGGTCAACCAGAGCCTGCTGAGCCCCCTGTCT
 GGAGGTGGACCCCAACATCCAGGCGGTGGCAGCCAGGAGAAGGAGCAGATCAAGACCT
 CAACAACAAGTTTGCTCTTCATAGACAAGGTACGGTTCTGGAGCAGCAGAACAAGAT
 GCTGGAGACCAAGTGGAGCCTCTGCAAGCAGAGAAGACGGCTCGAAGCAACATGGACA
 ACATGTTTCGAGAGCTACATCAACATCTTAGGGCGCAGCTGGAGACTCTGGGCCAGGAGA
 AGCTGAAGCTGGAGGCGGAGCTTGGCAACATGCAAGGGCTGGTGGAGGACTTCAAGAAC
 AAGTATGAGGATGAGATCAATAAGCGTACAGAGATGGAGAACGAATTGTCTCATCAAG
 AAGGATGTGGATGAAGCTTACATGAACAAGGTAGAGCTGGAGTCTCGCTGGAAGGGCTG
 ACCGACGAGATCAACTTCTCAGGCAGCTGTATGAAGAGGAGATCCGGGAGCTGCAGTCC
 CAGATCTCGGACACATCTGTGGTCTGTCCATGGACAACAGCCGCTCCCTGGACATGGACA
 GCATCATTTGCTGAGGTCAAGGCACAGTACGAGGATATTGCCAACCGCAGCCGGGCTGAGG
 CTGAGAGCATGTACCAGGTCAAGTATGAGGAGCTGCAGAGCCTGGCTGGGAAGCACGGGG
 ATGACCTGCGGCGCACAAAGACTGAGATCTCTGAGATGAACCCGGAACATCAGCCCGGCT
 XCAGGCTGAGATTGAGGGCTCAAAGCCAGAXGGCTTTCCTGGAXGCCGCCAT

11767.2.contig

CCCGGAGCCAGCCAAACGACCGGAAAAATGGCAGACAAATTTTGGCTCCATGATGGCTTATCT
 GGGTCTGGAACCCAAACCTCAAGGATGGCTTGGCCGATGGGGGAACAGCCTGCTGGG
 GCAGGGGGCTACCCAGGGGCTTCTATCTTGGGGCTACCCCGGCGAGGCACCCCGAGGG
 GCTTATCTGGACAGGCACCTCCAGGCGCTACCTTGGAGCACCTGGAGCTTATCCCGGAG
 CACCTGCACCTGGAGTCTACCCAGGGGACCCAGCGGCGCTGGGGCTACCCATCTTCTGG
 ACAGCCAAAGTSCCAGCGAGCCTACCTGCCACTGGCCCTATGGCGCCCTGCTGGGCCA
 CTGATTGTGCCCTATAACCTGCCCTTGGCTGGGGAGTGGTGCCTGGCATGCTGATAACAA
 TTCTGGGCACGGTGAAGCCCAATGCAACAGAAATGCTTTAGATTTCCAAAGAGGGAAATG
 ATGTTGCCCTTCACTTTAACCCAGGCTTCAATGAGAACAAACAGGAGAGTCAATTGGTTGCAA
 TACAAAGCTGGATAA

11768-1&2

GGGAATCCAACAACCTTTATTGAAGGAAAGTGCAATGAATTTGTTGAAACCTTAAAAGG
 GGAACCTTAGACACCCCCCTCRA₂CGMAGKACCAAGTGCCARA₂GTGGACTCTTTCTGGAT
 GTTGTAGTCAGACAGGGTRCGWCCATCTTCCAGCTGTTTYCCRGCAAAGATCAACCTCTGC
 TGATCAGGAGGRATGCCCTTCTTATCTTGGATCTTTGCCCTTGACATTCTCGATGGTGTCACT
 GGGCTCCACCTCGAGGGTGATGCTCTTACCAAGTCAGGCTTTCACGAAGATYTGATCCCA
 CCTCTGAGACCGAGCACAGGTCCAGGTRGACTCTTTCTGGATGTTGTAGTCAGACAGG
 GTGGCGYCCATCTTCACTGCTTTCCS₂CCAAAGATCAACCTCTGCTGGTCAAGGAGGRATGC
 CTTCTTGTCTTACAGTCAGGCTCTTACGAAGATCTGATCCCACTCTAAGACGGAGCA
 GTGATGGTCTTACCAAGTCAGGCTCTTACGAAGATCTGATCCCACTCTAAGACGGAGCA
 CCAGGTGCAGGGTGGACTCTTTCTGGATG₂TTGTAGTCAGACAGGGTCCCTCCATCTTCCA
 GCTGTTTCCAGCAAAGATCAACCT

FIG. 15E

11768-1&2-11735-1&2

AGGTTGATCTTTGCTGGGAAACAGCTGGAGATGGACGCACCCCTGTCTGACTACAAcCATC
 CAGAAAAGAGTCCACCCTGCACCTGGTGCTCCGTCTTAGAGGTGGGATGCAGATCTTCGTGA
 AGACCCCTGACTGGTAAGACCATCACTCTCGAAGTGGAGCCGAGTGACACCATTGAGAAyG
 TCAARGCAAAGATCCARGACAAGGAAGGCATYCTCCTGACCAGCAGAGGTTGATCTTTG
 CcSGGAAAgCAGCTGGAAGATGGRCGCACCCCTGTCTGACTACAAATCCAGAAAAGAGTCYA
 CCCTGCACCTGGTGCTCCGTCTCAGAGGTGGGATGCAATCTTCGTGAAGACCCCTGACTGG
 TAAGACCATCACCCCTCGAGGTGGAGCCCAGTGACACCATCGAGAATGTCAAGGCAAAGAT
 CCAAGATAAGGAAGGCATCCCTCCTGATCAGCAGAGGTTGATCTTTGCTGGGAAACAGCT
 GGAAGATGGACGCACCCCTGTCTGACTACAAATCCAGAAAAGATCCACcTYTGACATYGGT
 MCTBCGcCTYcGAGGKGGGRTGcnaaTCTWMTKWagaCjCjCjCTKKYAAGRYYaTCAMCMWt
 gAKKTCgAKYSCASTKWcTCTWTCRAKAAMGTYRWWGCawagaTCCMAGACAAGGAAGGC
 ATTCCTCCTGACCAGCAGAGGTTGATCT

11769.1.contig

ATGGAGTCTCACTCTGTGACCAAGCCTGGAGCGCTGTGGTGGGATATCGGCTCACTGCAGT
 CTCCACTTCCCTGGGTTCAAGCGATCCCTCTGCCTCAGCCTCCCGAGTAGCTGGGACTACAG
 GCAGGCGTCACCATAATTTTGTATTTTACTAGAGACATGGTTTCGCCATGTTGGCTGGG
 CTGGTCTCGAACTCCTGACCTCAACTCATCTGTCTGGCCTCCCAAAGTGTGGGATTACA
 GCGGAAAGCCAAAGCTCCCGGCCAGCCAAACAATTTAGAAATGAAGGAAATATGCAAAAG
 AACATCACAATCAAGGATCAATTAATACCATCTATTAACTATAATGTGGGTAATTATGA
 CTAATTCCTCAAGCATTTCTACGTTGACTGCTTGAGAAGATGTTTGTCTGCAATGGTGGAGAG
 TGGAGAAGGGCCAGGATTTCTAGCT

11769.2.contig

AGCGCGGTCTTCGGCGCGAGAAAGCTGAAGGTGATGTGGCCGCCCTCAACCGACGCATC
 CAGCTCGTTGAGGACCACTTCCACAGCGCTCAGGAACGACTGGCCACGGCCCTGCAGAAg
 CTGGAGGAGGCAGAAAAAGCTGCAGATGAGAGTGAGAGAGGAATGAAGGTGATAGAAAA
 CCGGCCCATGAAGGATGAGGACAAATCGAGATTCAGGAGATGCAGCTCAAAAGAGGCCA
 AGCACATTCCGGGAAGAGCCTGACCCCAATACGAGCAAGTAGCTCGTAAGCTGGTCAATCC
 TGGAGGCTCAGCTGCAGAGCCGACAGGACCGTGGGAGGTGTCTGAACATAAAATGTGGT
 GACCTGGAAGAACAACTCAACAAATGTTACTAACAACTGAAATCTCTGGAGGCTGCATCT
 GAAAAGTATTCTGAAAAGGAGGACAAAATGAAGAAGAAATTAACCTTCTGTCTGACAAA
 CTGAAAGAGGCTGAGACCCGTGCTGAATTTGCAGACAGAAACCGTTGCAAAACTGGAAAAG
 ACAATTGATGACCTGGAACAGAAACTTGGCCAGC

11770.1.contig

GTGCACAGGTCCCAATTTATGTAGAAAAATAATAATTACAGTGATGAATAGCTCTTCTT
 AAAATACAAAAACAGAAACCACAAAAGGAAGAGGAAAAACCCCAAGGACTTCCAAGGGT
 GAAGCTGTCCCTCCTCCTGCCACCCCTCCCAAGGCTCAATTACTGTCTTGAAGGGGCAGA
 GGACTCAGAGGGGATCAGTCTCCACCGCCCTGGGCTGAAGCGGGTGAGGCACAGAGTCC
 TGAGGCCACAGAGCTGGGCAACCTGACCCGCTCTCTGGCCCCCTCCCCACCCTGCCCCA
 AACCTGTTTACAGCACCTTGGCCCCCTCCCTCTAAACCCGTCCATCCACTCTGCACTTCCCA
 GGCAGGTGGGTGGGCCAGGCTCAGCCATACTCCTGGCCGGGGTTTCGGTGACCAAGGC
 ACAGTCCCAGAGTGATATCAAGGCT

FIG. 15F

11770.2.contig

GCAAGGAACJGGTCTGCTCACACTTGCTGGCTTGGCATCAGGACTGGCTTTATCTCCTGA
CTCAGGTGCAAGGTGCACTCTGGCAACGTTAAGTCCGTCCCCAGCGCTTGAATCCTAC
GGCCCCACAGCCGGATCCCTCAGCCTTCCAGGTCTCAACTCCCGTGGACGCTGAACAA
TGGCCTCCATGGGGCTACAGGTAAATGGGCATCGCGCTGGCGTCTGGCTGGCTGGCGT
CATGCTGTGCTGGCGCTGCCATGTGGCGGTGACGGCTTCATCGGCAGCAACATTGTC
ACCTCGCAGACCATCTGGGAGGGCCTATGGATGAACTGCGTGGTGCAGAGCACGGGCCAG
ATGCAGTGCAAGGTGTACGACTCGCTGCTGGCACTGCCGAGGACCTGCAGGGGGCCCCG
GCCCTGTCATCATCA

11773.1.contig

TGCAAAAGGGACACAGGGGTTCAAAAATAAAAATTTCTTCCCCCTCCCCAAACCTGTAC
CCAGCTCCCCGACCACAAACCCCTTCTCCCCGGGAAAGCAAGAAGGAGCAGGTGTG
GCATCTGCAGCTGGGAAGAGAGAGGGCGGGGAGGTGCCGAGCTCGGTGCTGGTCTCTTC
CAAAATATAAATACXTGTGTGAGAATGGAATCTCCAGCACCCACCACCCAAAGCACTCT
CCGTTTCTGCGGTGTTTGGACAGGGGGGGGGGAGGGGGCCAGGCACCGGTGGCT
GCGGTCTACTGCATCCGCTGGGTGTGCACCCCGGAGCCTCTGCTGCTCATTTGTAGAAGA
GATGACACTCGGGGTCCCCCGGATGGTGGGGCTCCCTGGATCAGCTTCCCGGTGTTGGG
GTTACACACACGCACTCCCCACGCTGCCGTTACAGAGACATCTTGCAGTGTGAGGTTG
TACAGGCCATGCTTGTACAGTTG

11778.1.contig

CGGTTGGAGGGACTGGTTCTTTATTTCAAAAAGACACTTGTCAATATTCACTATCAAAACA
GTTGCACTATTGATTTCTCTTTCTCCCAATCGGCCCCAAAGAGACCACATAAAAGGAGAGT
ACATTTTAAGCCAATAAGCTGCAGGATGTACACCTAACAGACCTCTAGAAACCTTACCAG
AAAATGCGGACTGGGTAGCGAAGCAAACTTAAAGATCAACAAACTGCCAGCCACCGA
CTGCAGAGGCTCTCACAGCCAGATGGGGTCCCCAGGGTCCCAAAACCCAAAGCAAGTT
TCAAAATAATATAAAATTTAAAGTTTGTACATAAGCTATTCAAGATTTCTCCAGCACT
GACTGATACAAAGCACAAATGAGATGGCACTTCTAGAGACAGCAGCTTCAAAACCCAGAAA
AGGGTGATGAGATGAGTTTACATGGCTAAATCAGTGGCAAAAACACAGTCTTCTTTCTT
CTTTCTTTCAAGGAGGCAAGCAAGCAATTAAGTGTACCTCAACATAAGGGGGACATGA
TCCATTCTGTAAAGCAGTTGTGAAGGG

11778-2&30-2

CAGGAACCGGAGCGGACGAGTAGCTGGCTGGCCACCATGGCTGGGATCACCACCATCGA
GGCGGTGAAGCGCAAGATCCAGCTTCTGACGACGAGGACAGATGATCCAGACGAGCGAG
CTGAGCGCTCCAGCGAGAACTTGACGGAGAAAGCGGGGGGGGAAACAGGCTGAGGCT
GAGGTGGCTCCTTGAACCGTAGGATCCAGCTGGTTGAAGAAGAGCTGACCGTGGCTCAG
GAGCGCTGGCCACTGCCCTGCAAAAGCTGGAAGAACTCAAAAAGCTGCTGATGAGAGT
GAGAGAGGTATGAAGGTTATTGAAAACCGGGCTTAAAGATGAAGAAAAGATGGAACT
CCAGGAAATCCAACCTAAAGAACCTAACCCATTGCAAGAGCCAGATAGCAAGTATG
AAGAGGTGGCTCGTAAGTTGCTGATCATTOAACGAGACTTGCACGCAAGAGCAACGAG
CTGAGCTGGCAGAGTCCCGTTGCCGAGAGATGGATGAGCAGATTAGACTGATGGACCAGA
ACCTGAAGTGTCTGAGTGC

FIG. 15G

11782.1.contig

ATCTACGTCAJCAATCAGGCTGGAGACACCATGTTCAATCGAGCTAAGCTGCTCAATATTG
 GCTTTCAAGAGGCCTTGAAAGGACTATGATTACAACCTGCTTTGTGTTCAAGTATGTGGACCT
 CATTCCGATGGACGACCGTAATGCCTACAGGTGTTTTTCGGAGCCACGGCACATTTCTGTT
 GCAATGGACAAGTTCGGGTTTAGCCTGCCATAATGTTCAATTTTGGAGGTGCTCTGCTCT
 CAGTAAACAACAGTTTCTTGCCATCAATGGATTCCCTAATAATTATTTGGGGTTGGGGAGGA
 GAAATGACGACATTTTTAACAGATTAGTTCATAAAGGCATGTCTATATCACGTCCAAATG
 CTGTAGTAGGGAGGTGTCGAATGATCCGGCATTCAAGAGACAAGAAAATGAGCCCAATC
 CTCAGAGGTTTGACCGGATCGCACATACAAAGGAACGATGCGCTTCGATGGTTTGAAC
 CACTTACCTACAAGGTGTTGGATGTCAGAGATACCCGTTATATACCCAAATCAC

11782.2.contig

CTAGACCTCTAATTAAAAGGCCAATCATGCTGGAGAATGAACAGTCTGACCCCGAGGGC
 CACAGCGAATTTTAGGGAAGGAGGCAAGAGGTGAGAAGGGAAAGGAAAGAAAGGAAGG
 AAGGAGAACAATAAGAACTGGAGACGTTGGGTGGGTGACGGAGTGTGGTGGAGGCTCGG
 AGAGATGGTAAACAAACCTGACTGCTATGAGTTTCAACCCCATAGTCTAGGGCCATGAG
 GCGTCAGTTCTTGGTGGCTGAGGCTCTTCCACCCAGCCCACTGGGGAGTGGAGTGG
 GGAGTTCTGCCAGGTAAAGCAGATGTTGCTCTCCCAAGTTCCTGACCCAGATGCTGGCAGGA
 TAACGCTGACCTGTTCCCTCAACAAGGACCTGAAAGTAATTTTGCTCTTTAC

11783-1 & 2

CCGAATTCAGCGCTCAACGATCCYTCCTTACCATCAAAATCAATGCCCCACCAATGGTACT
 GAACCTACGAGTACACCGACTAGCGGGGACTAATCTTCAACTCTACATCTCCCCCAT
 TATTCTAGCAACCAGCGACCTGCGACTGCTTGACGTTGACAAATCGAGTAGTACTCCCGAT
 TGAAGCCCCCATTCGTATAATAATTACATCACAAGCGTCTTGCACTCATGAGCTGTCCCC
 ACAATTAGGCTTAAAAACAGATGCAATTCGCGACGCTAAAGCCAAACCACTTTCACCGCTA
 CACGACGGGGGTATACTACCGTCAATGCTCTGAAATGCTGGAGCAACCCACAGTTTCAT
 GCCCATCGTCTAGCAATTAATTCGCTAAAAATCTTTGAAATAGGGCCCGTATTTACCCTA
 TAGCACCCCTCTACCCCTCTAG

11786.1.contig

GCTCTTCACACTTTTATTGTTAAATCTCTTCACATGGCAGATACAGAGCTGTGCTTGAAG
 ACCACCTAGTACAGGAAATGCCACTTTTACAAAATCATCCCCCTTTTCATGATTGGAAC
 AGTTTTCTGACCGTCTGGAGCGTTGAAGCGTGACGACATTTGCACATGCCAAAAA
 GGASTGACCCCAAGGCTCAACACACTTCCCAGAGCTACCATGGGCTGCAGGTGACTT
 GCCAGCTTTGGGTTCTGTGAGCTTCTTCTGCTGCTGCGGTGGGAGGCCCTCAAGAACTGA
 GACCCCGGGGTATGCTTCAAGAGTGAACATTTACGGGACAAAAGCCCATCATTAGGAT
 AACCAACAGCCACAGCACTTCATGCTTCTGAGGTTACCTGTAGGAGCGGGTCAAGGAT
 TCCAGTTTATGAAAAATTAAGCAAAACAGGTTTTTACCTGGGTGGGAAACAGGAAAAC
 TGTGATGTCGCCCATGACCAACATTTTCTGCCCATGTGAAGGTCCCCATGAAACC

FIG. 15H

11786.2.contig

CAAGCGCTTGCGTTTGGACCCAGTTCACTGAGGTTCTTGGGTTTGTGCCTTTGGGGATT
 TGGTTTGACCCAGGGGTCAGCCTTAGGAAGGTCTTCAGGAGGAGGCCGAGTTCCCTTCAG
 TACCACCCCTCTCTCCCACTTTCCCTCTCCCGGCAACATCTCTGGGAATCAACAGCAATT
 GACACGTTGGAGCCGAGCCTGAACATGCCCTCGCCCCAGCACATGGAAAACCCCTTC
 CTTCCTAAGGTGTCTGAGTTTCTGGCTCTTGAGGCAATTTCCAGACTTGAAATTCTCATCAG
 TCCAATTGCTCTTGAGTCTTTGCAGAGAACCTCAGATCAGGTGCACCTGGGAGAAAGACTTT
 GTCCCCACTTACAGATCTATCTCTCCCTTGGGAAGGGCAGGGAATGGGGACGGGTATGG
 AGGGGAAGGGATCTCCTGCGCCCTTCAATGCCACACTTGGTGGGACCATGAACATCTTTAG
 TGTCTGAGCTTCTCAAATTAAGTCAATAGGA

13691.1&2

AGCGTCAAATCAGAATGGAAAAGACTCAAATCCATCATCAACACCAAGATCAAAGGAC
 AAGRATCCTTCAAGAAACAGGAAAACCTCTAAACACCAAAAGGACCTAGTTCTGTAG
 AAGACATTAAAGCAAAAATGCAAGCAAGTATAGAAAAGGTGGTTCTCTCCCAAAGTGG
 AAGCCAAATTCATCAAATATGTGAAGAAATGCTTCCGGATGACTGACCAAGAGGCTATTCA
 AGATCTCTGGCAGTGGAGGAAGTCTCTTAAAGAAAATAGTTTAAACAAATTTGTTAAAAAT
 TTTCCGTCTTATTTCAATTTCTGTAACAGTTGATATCTGGCTGCTCTTTTAAATGCAGAGT
 GAGAACTTTCCCTACCGTGTGTTGATAAATGTTGTCCAGTTCTATTGCCAAGAATGTGTTGT
 CCAAAATGCCGTGTTTAGTTTAAAGATGCAACTCCACCTTTGCTTGGTTTAAAGTATGTA
 TGGAAATGTTATGATAGGACATACTAGTACCGGTGCTCAGACATGGAAAATGGTGGGSMGAC
 AAAAATATACATGTGAAATAA

13692.1&2

TCCGAATTCGAAGCGAATTAAGCAAAACCAATTCCTTTAGAGGATTACTTTTTCAATTTT
 GGTTTTACTAATCTAGGCTTTGCGTGTAAAGCAATACAACGATGGATTTTAAATACTGTTTG
 TCGAATGTGTTTAAAGCAATTAATCTAGAACCTTTGTATATTTGATAGTATTTCTAACTTTT
 ATTTCTTACTGTTTGCAGTTAAATGTTCAATGTTCTGCTATGCAATCGTTTATAAGCAGTTTC
 TTTAAATTTTTAGATTTTCTGGATGATAGTTTAAACAACAAAAGTCTATTTTAAACTG
 TACGAGTAGTTTACAGTTCTAGCAAAAGCAAGTTGTGGGGTTAAACTTTGTATTTTCTT
 TCTTATAGAGGCTTCTAAAAAGGTATTTTATATGTTCTTTTAACAAAATATTGTGTACAAC
 CTTTAAAAACATCAATGTTTGGATCAAACAAGACCCAGCTTATTTTCTGC

13693.2

TGTGCTGGCGCGCGCTGAGGTGGAGGCCAGGACTCTGACCTGCGCCCTGCCTTCAGCAA
 GGCCCCCGGAGCGCGCGCCACTACGAACCTGCGGTGGTTGAAAAATATAGGCCAGTAAA
 GCTGAATGAAATTTGCGGCAATGAAGACACCGTGAGCAGGCTAGAGGTCTTTGCAAGGGA
 AGGAAATGTGCCCCAACATCATCAATTCGGGGCCCTCCAGGAACCGGCAAGACCACAAGCAT
 TCTGTGCTTGGCGCGCGCGCTGCTGCGCCAGCACTCAAAGATGCCATGTTGGAACCTCAAT
 GCTTCAAATGACAGGGCCATTGACGTTGTGAGGAATAAAATTAATAATGTTTGTCTAACAA
 AAAGTCACTCTTCCCAAAGCGGACATAAGATCATCAATCTGGATGAAGCAGACAGCATG
 ACCGACGGAGCCCAAGCAAGCCTTGAGGAGAACCATGGAATCTACTCTAAAACCACTCGT
 TCGCCCTTGCTTGTAATGCTTCGGATAAGATCATCGAGCC

FIG. 151

13696.1-13744.1

CTTTGCAAAGCTTTTATTTTCATGTCGTGCGGCATGGAATCCACCTGCACATGGCATCTTAGCT
GTGAAGGAGAAAGCAGTGCACGAGAAGGAATGAGTGGGCGGAACCAACGGCCTCCACAA
GCTGCCCTCCAGCAGCCTGCCAAGGCCATGGCAGAGAGAGACTGCAAAACAAACACAAGCA
AACAGAGTCTCTTCACAGCTGGAGTCTGAAAGCTCATAGTGGCATGTGTGAATCTGACAA
AATJAAAAGTGTGCATAGTCCATTACATGCATAAAACACTAATAATAATCCTGTTTACACG
TGACTGCAGCAGGCAGGTCCAGCTCCACCCTGCCCTCCTGCCACATCACATCAAGTGCCA
TGGTTTAGAGGGTTTTTCATATGTAATTTCTTTTATTCTGTAAAAGGTAACAAAATATACAG
AACAAAACCTTTCCCTTTTTAACTAATGTTACAAATCTGTATTATCACTTGGATATAAAT
AGTATATAAGCTGATC

13700.1

CAAGGGATATATGTTGAGGGTACRGRGTGA⁻ACTGAACAGATCACAAAGCAGGAGAAACA
TTAGTTCTCTCCCTCCCAAGCGTCTCCTTCGTCTCCCTGGTTTTCCGATGTCCACAGAGTGA
GATTGTCCCTAAGTAACTGCATGATCAGAGTGTCTGCTTTATAAGACTCTTCATTACGGCT
ATCCAAATCAGCAATTGCTTCATCAAAATGCCGTTTTTGCCAGGCTACAGGCCTTTTCAGGA
GAGTTTAGAATCTCATAGTAAAAGACTGACAAATTAAGTCCAGACCAAGACGAATTGGG
TGTGTAGGCTGCATTNCTTTCTTACTAATTTCAAATGCTTCCTGGTAAGCCTGCTGGGAGTT
CGACACAAGTGGTTTTGTTGCTCCAGATGCCACTTCAGAAAGATACCTAAAATAATCT
CCTTTTCATTTCAAAGTAGAACAC

13700.2

TCCGGAGCCGGGGTACTCCCGCGCGCGCGCGGGTGCAGCCACTGCAGGCACCGCTGCC
GCCGCTGAGTAGTGGGCTTAGCAAGGAAGAGGTGATCTCGCTCGGAGCTTCGCTCGGAA
GGCTCTTTGTTCCCTGCAGCCCTCCACCGGAATGACAATGGATAAAAGTGAAGCTGGTACA
GAAAGCCAAACTCGCTGAGCAGGCTGAGCGATATGATGATATGGCTGCAGCCATGAAGGC
AGTCACAGAACAGGGGCATGAAGTCTCCAAAGGAAGAGAGAAATCTGCTCTCTGTTGCCA
CAAGAATGTGGTAAGGCCCGCGCGCGCTCTTCTGGCGTGTCATCTCCACCATGAGCAGA
AAACAGAGAGGAATGAGAAAGAACCCAGATGGGCAAGAGAGTACCGTGAGAAACATAGA
GCCAGAACTGCAGGACATCTGCAATGATGTTCTGGACCTTGTGGACAAATATCTTATTCC
AATGCTACACAACCCAGAAA

13701.1

AAAAAGCAGCARGTTCAACACAAAATACAAATCTCAAATGTAGGATAGAACAACCAAA
GTCTCTGACGGGGCAAGCAACAGCAAAAGGAAGAAATGAGATGTTGCAAAAAGATGGA
GGAGGGTTCCCTCTCCTCTGGGCACTGACTCAAACTGATGTGGCACTATACACCATTC
CAGAGTCAGGGCTGTTCAATCTTTTCCCACTAAGAAAAGGTGGGGATTAAAGAAACGT
TTCTGACGCTTAGGGACCAAGGCTGGTCTTTTCCCTCCCAACCCCTTGAATCCCTTT
CTCTGATCAGGGGAAAGGAGCTCGAATGAGGAGGTAGAGTTGGAAAAGGAAAGCAATC
CACTTGACAGAAATGGGACAGACTCCTTCCCA

FIG. 15J

13701.2

TGGCAATAGCACAGCCATCCAGGAGCTCTTCARGCGCATCTCGGAGCAGTTCAGTGCCATG
TTCCGCCCGGAAGGCCCTTCTCCACTGGTACACAGGCGAGGGCATGGACGAGATGGAGTTC
ACCGAGGCTGAGAGCAACATGAACGACCTCGTCTCTGAGTATCAAGCAGTACCAGGATGC
CACCGCAGAAGAGGAGGAGGATTTCGGTGAGGAGGCGGGAAGAGGAGGCCCTAAGGCAGAG
CCCCATCACCTCAGGCTTCTCAGTTCCTTACGCCGTCTTACTCAACTGCCCTTTCTCTCC
CTCAGAAATTTGTGTTTGTGCTGCTCTATCTTGTGTTTTTGTGTTTTTCTTCTGGGGGGTCTAGAA
CAGTGCCTGGCACATAGTAGGCGCTCAATAAATACTTGGTTGNTGAATGTCTCCT

13702.2

AGCTGGCGCTAGGGCTCGGTTGTGAAATACAGCGTGTGTCAGCCCTTGGCGCTCAGTGTAGAA
ACCCACGCCTGTAAGGTGGGTCTTCGTCCATCTGCTTTTTCTGAAATACACTAAGAGCAG
CCACAAAATGTAACCTCAAGGAAACCATAAAGCTTGGAGTGCCTTAATTTTAAACCAATT
TCCAATAAAACGGTTTACTACCT

13704.2-13740.2

GGAGATGAAGATGAGGAAGCTGAGTCAGCTACGGGCGAGCGGGCAGCTGAAGATGATGA
GGATGACGATGTCGATACCAAGAAGCAGAAAGACCGACGAGGATGACTAGACAGCAAAAA
AGGAAAAAGTTAAA

13706.1

GATGAAAATTAATACTTAAATTAATCAAAAAGGCACTACGATACCACCTAAAACCTACTG
CCTCAGTGGCAGTAKGCTAAKCAACATCAAGCTACAGSACATYATCTAATATGAATGTTA
GCAATTACATAKCAAGCATGTTTGGTTTCCAGAAGACTATGCNACAATGGTCATTWG
GGCCCAAGAGGATAATTTGCCNCCAAAAGCATCAAGATAGATNAANGTAAAG

13706.2

GAGTAGCAACGCCAAAGCGCTTGGTATTGAGTCTGTGGGSGACTTCGGTTCCGGTCTCTGCA
GCAGCCGTGATCGCTTACTGGAGTGCTTAGGGTAGTTGGCCAGGATGCCGAATATCAAAA
TCTTCAGCAGGCGCTCCACAGGACTTATCTCASAATAATGCTGACCGCTGGGCTGG
AGCTAGGCAAGGTGGTGACTAAGAAAATTCAGCAACCAGGAGACCTGTGTGCAAAATGGTG
AAAGTGTACCGTGGACAGGATGTCTACATTTGTTTCAGAGTGGNTGTGGGCAATCAATGAC
AATTTAATGGAGCTTTTATCATGATTAATGCTGCAAGATTGCTTCAGCCAGCCGGGTTA
CTGCAGTCATCCATGCTTCCCTTATGCCCGGCGAGGATAAGAAAAGATVAGAGCCGGGCC
GCCAATCTCAGCCAAAGCTTGGTCCAAAATATGCTATCTGTAGCAGTGCAGATCATATTATCA
CCATGGACCTACATGCTTCTCAAAATTCANGCCTTTT

FIG. 15K

13707.3

ATGCAAAAGGGGACACAGGGGGTTCAAAAATAAAAATTTCTCTTCCCTCCCAACCT
GTACCCAGCTCCCGACCACAACCCCTTCTCCCGGGGAAAGCAAGAAGGAGCAGG
TGTGGCATCTGCAGCTGGCAAGAGAGAGGGCCGGGAGGTGCCGAGCTCGGTCTCTCTC
TTTCCAAATATAAATACGTGTGTGAGAACTGGAAAACTCTCCAGCACCCACCAAGCA
CTCTCCGTTTTCTGCCGGTGTGAGAGAGGGGGGNGGGCAGGGCGCCAGGCACCGGT
GGCTGCGGTCTACTGCATCCGCTGGGTGTGCACCCCGCA

13710.2

AGGTTGGAGAAGGTCAATGCAGGTGCAGATTGTCCAGGSKAGCCACAGGGTCAAGCCAA
CAGGCCAGAGTGGCACTGGACAGACCATGCAGGTGATGCAGCAGATCACTAACACA
GGAGAGATCCAGCAGATCCCGGTGCAGCTGAATGCCGGCCAGCTGCAGTATATCCGCTTA
GCCCAGCCTGTATCAGGCACTCAAGTTGTGCAGGGACAGATCCAGACACTTGCCACCAAT
GCTCAACAGATTACACAGACAGAGGTCCAGCAAGGACAGCAGCAGTTCAAGCCAGTTCAC
AAGATGGACAGCAGCTCTACAGATCCAGCAAGTCACCATGCTGCGGGCCANGACCTCG
CCAGCCCATGTTTATCCAGTCAAGCCAACCAAGCCCTTCNACGGGCAGGCCCCCAGGTGAC
CGGCGACTGAAGGGCCTGAGCTGGCAAGGCCAANGACACCCAACACAATTTTGGCATAC
AGCCCCAGGCAATGGGCACAGCCTTTCTCCAGAGGAC

13710-1

TGAGATTTATTGCATTTCAATGCAGCTTGAAGTCCATGCCAAAGGRCAGTACACAGTTTTTA
ATGCATTTAAAAAATAAAAGGGAGGTGGCCAGCAACACACAAGTCTAGTTTCTGGG
TCCCTGGGAGAAAAAGAGTGTGGCAATGAATCCACCCACTCTCCACAGGGAATAAATCTGT
CTCTTAATGCAAGCAATGTTTCCATGCCCTCTGGATGCAATAACACAGAGCTCTGGGGTC
AGAGCAAGGCATGGGACAGGACCAAGTGAATAAGCAGCTACACACATTCACCTAAT
TCCATCTGAGGGCAACAACAAGCTGGCAAGTCTTGGGGTACAGCTGTT

13711.1

TCCAGACATGCTCCTGTCTAGGCGGGACCAAGGAACAGACCTGCTATGGGAAGCAGAA
AGAGTTAAGGGAAGGTTTCTTCAATCTTCTCTCTTTTGTCTTGAAACAGTTTTTA
AATATACTAATAGCTAAGTCAATTTGCCAGCCAGTCCCGGTGAACAGTAGACAACAAGGA
GCTTGCTAAGAAATTAATTTGCTGTTTTACCCCAATCAACAGAGCTGCCCTGTTCCCTG
ATGGAGTTCCATTCCTGCCAGGGCAGGCTGAGTAACACGAAGCAATCAAGAAAGGCGG
GTGTGAATCACTGCCACCCCATGGACAGACCCCTCACTCTTCTTCTAGCCGAGGGCT
ACTTAATAAATAATTTATCTTTGAAATTAAGTAACCGATTTTCCATGCGGCATCCTA
AGGGCACTTGGCAGCTCTTAACCGACAGTCAAGCACTGTTGTTGGACAACAGATAAAGG
AAAAGAAAAAGAAAGAAAACAACCCCACTTCTGT

FIG. 15L

13711.2

TGAGACGGACCACTGGCCTGGTCCCCCTCATKTGCTGTCGTAGGACCTGACATGAAACGC
AGATCTAGTGGCAGAGAGGAAGATGATGAGGAACTTCTGAGACGTCCGCAGCTTCAAGAA
GAGCAATTAATGAAGCTTAACTCAGGCCTGGGACAGTTGATCTTGAAAGAAGAGATGGAG
AAAGAGAGCCGGGAAAGGTCATCTCTGTTAGCCAGTCGGTACGATTCTCCATCAACTCAG
CTTCACATATTCATCATCTAAAACCTGCATCTCTCCCTGGCTATGGAAGAAATGGGCTTCA
CCGGCCTGTTTTCTACCGACTTCGCTCAGTATAACAGCTATGGGGATGTCAGCGGGGAGTG
CGAGATTACCAGACACTTCCAGATGGCCACATGCCTGCAATGAGAATGGACCGAGGAGTG
TCTATGCCCCAACATGTTGGAACCAAGATATTTCCATATGAAATGCTCATGGTGACCAACA
GAGGGCCGAACCAAAATCTCAGAGAGGTGGACAGAA

13713.1&2

TCACTTTATTTTCTGTATAAAAACCTATGTTGTAGCCACAGCTGGAGCCTGAGTCCGCT
GCACGGAGACTCTGGTGTGGGTCTTGACGAGGTGGTCAGTGAACCTCTGATAGGGAGACT
TGGTGAATACAGTCTCCTTCCAGAGGTCCGGGGTCAGGTAGCTGTAGGTCTTAGAAATGGC
ATCAAAGGTGGCCTTGGCGAAGTTGCCCCAGGGTGGCAGTGCAGCCCCGGGCTGAGGTGTA
GCAGTCTATCGATACCAGCCATCATGAG

13715.4

CTGGAATATAGACCCGTGATCGACAAAACCTTGAACGAGGCTGACTGTGCCACCGTCCCGC
CAGCCATTGGCTCTACTGATGACACAGATGTGGTGATGACAGAAATCAGCTTTTGTAAIT
ATGTATAATAGCTCATGATGTGTCTATGTCAACTGTCTTCATACCGCTTCTGCATCTGG
GGAAGAAGGAGTACATTGAAGCGGAGATTGCCACCTAGTGGCTGGGAGCTTCCAGGAACC
CAGTGGCCAGGGACCGTGGCACTTACCTTTGTCCCTTCTTCATTCTTGTGAGATGATAAA
ACTGGCCACAGCTCTTAAATAAAATATAAATCAACA

13717.1&2

TGAATGGGGAGGAGCTGACCCAGCAAAATGGACCTTGNGGAGACCAGGCCTGCAGGGGAT
GGAACCTTCCAGCAAGTGGGCATCTGTGCTGGTGCCTCTTGGGAAGGAGCAGAAAGTACACA
TGCCATGTGCAACATGAGGGGCTGCCTGAGCCCTCACCCTGAGATCGGGCAAGGAGGAG
CCTCCTTCAATCCACCAAGACTAACACAGTAATCAATGCTGTTCCGGTTGTCTTGGAGCTGT
GGTCATCCTTGGAGCTGTGATGGCTTTGTGATGAAGAGGAGGAGAAACACAGGTGGAAA
AGGAGGGGACTATGCTCTGGCTCCAGGCTCCAGAGCTCTGATATGTCTCTCCAGATTGT
AAAGTGTGAAGACAGCTGCCTGGTGTGGACTTGGTGACAGACAATGTCTTCACACATCTCC
TGTGACATCCACAGACCTCAGTCTCTTACTCAAGTGTCTGATGTTCCCTGTGAGTCTCCG
GGCTCAAAGTGAAAGACTGTGCAAGCCCACTCCACCCCTGCCACACCAGGACCCTATCCCTG
CACTGCCCTGTGTTCCCTTCCACAGCCAACTTCTGCTCCAGCCAAACATTGGTGGACAT
CTGCAGCCTGTGAGCTCCAATGCTACCTGACCTTCAACTCCTCACTTCCACACTGAGAATA
ATAATTTGAAATGTGGGTGGCTGGACAGATGGCTCAGCGGTGACTGCTCTTCCAAAGGTCTT
GAGTTCAAATCCCAAGCAACCATGGTGGCTCACAACCATCTGTAATGGGATCTAATACCC
TCTTCTGCACTGTCTGAACACACTACAGTGTACTTACATATAATAAATAAATAAG

FIG. 15M

13719.1&2

GGCCGGGGCGCGCGCCCCGCCACACGCACGCCGGGGCGTCCAGTTTATAAAGGGAGAG
AGCAAGCAGCGAGTCTTGAAGCTCTGTTTGGTGCTTTGGATCCATTTCCATCGGTCTTAC
AGCCGCTCGTCAGACTCCAGCAGCCAAGATGGTGAAGCAGATCGAGAGCAAGACTGCTTT
TCAGGAAGCCTTGGACGCTGCAGGTGATAAACTTGTAGTAGTTGACTTCTCAGCCACGTGG
TGTGGGCTTGC AAAATGATCAAGCCTTTCTTTCAITCCCTCTCTGAAAAGTATTC AACGT
GATATTCCTTGAAGTAGATGTGGATGACTGT CAGGATGTTGCTTCAGAGTGTGAAGTCAAA
TGCA TGCCAAACATTCCAGTTTTTTAAGAAGGGACAAAAGGTGGGTGAATTTTCTGGAGCCA
ATAAGGAAAAGCTTGAAGCCACCA TTAATGAATTAGTCTAATCATGTTTTCTGAAAATATA
ACCAGCCATTGGCTATTTAAAAC TTGTAATTTTTTAAITTTACAAAAATATAAAATATGAA
GACATAAACCCMGTTGCCATCTCGGTGACAATAAACATTAATGCTAACACTT

13721.1

TCACATAAGAAATTTAAGCAAGTTACRCTATCTTAAAAAACACAACGAATGCATTTTAATA
GAGAAACCTTCCCTCCCTCCACCTCCCTCCCCACCCTCCTCATGAATTAAGAATCTAAG
AGAAGAAGTAACCATAAAACCAAGTTTGTGCAATCCATCATCCAGAGTGCTTACATGGT
GATTAGGTAAATATTGCTTCTTACAAAATTTCTATTTTAAAAAAAATTAACCTTGATTG
CTTATTACAAAAAAATTCAGTACAAAAGTTCAATATATTGAAAAATGCTTTTCCCTCCCT
CACAGCACCGTTTTATATATAGCAGAGAAATAATGAAGAGATTGCTAGTCTAGATGGGGCA
ATCTTCAAAATTACACCAAGACCGCACAGTGGTTATTTACCCTCCCTTCTCATAAG

13721.2

GGAAAGGATTCAAGAAATTAGACCACTTCTTCTGCTRRAGAAAAAGACAACCTCTCGTGGCAT
GCTGACAGACAAAGAGAGACAGATGGCCGAAATAAGGGATCAAAATCCAGCAACAGCTGA
ATGACTATGAACAGCTTCTTGATGTAAAGTTAGCCCTGGACATGGAAATCACTGCTTACAG
GAAACTCTTAGAAGGCCGAGAGAGACAGCTTGAAGCTGTCTCCAAAGCCCTTCTTCCCGTGT
GACAGTATCCCGAGCATCCTCAAGTCTAGTGTACCGTACAACCTAGAGGAAAGCCGGAAGA
GGGTTGATGTGGAAGAAATCAGAGCCGAACTAGTAGTGTAGCATCTCTCATCCGCTCAA
CCACTGGAAAATGTTTGCATCCAGCAAAATGATGTTGATGGGAAATTTATCCCGCTTGAAGA
ACACTTCTGAACAGCATCAACCAATGGGAAGCCCTGGGAGATGATCAGAAAAATGGAGA
CACATCAGTCAGTTATAAATATACCTCAA

13723.1

CATGGGTTTACCAGGTTGGCCAGGCTGCTTGAAGTCTGACCTCAGGTGATCCACCCG
CCTCGGCCTCCCAAAGTCTCTGGGATTACAGGCTGACCCACCAGCCCGGCCCCCAAAGC
TGTTTCTTTTGTCTTACCGTAAAGCTCTCTGCGCATGCAATCTACATAACTGACGTGAC
TGCCAGCAAGCTCAGTCACTCCGTGGTCTTTCTCTCTCCAGTTCTTCTCTCTCTTCAAG
TTCTGCCTCAGTGAAGCTGCAGGTCCCACTTAAGTGATCAGGTGAGGGTCTTTGAACC
TGGTTCTATCAGTCGAATTAATCTTCAATGATGG

FIG. 15N

13723.2

GATGTGTTGGACCCCTCTGTGTCAAAAAAACCTCACAAGAATCCCCTGCTCATTACAGAA
GAAGATGCAATTAAAAATATGGGTTATTTTCAACTTTTTATCTGAGGACAAGTATCCATTAA
TTATTGTGTCAGAAGAGATTGAATACCTGCTTAAGAAGCTTACAGAAGCTATGGGAGGAG
GTTGGCAGCAAGAACAATTTGAACATTATAAAATCAACTTTGATGACAGTAAAAATGGCC
TTTCTGCATGGGAACTTATTGAGCTTATTGAAAATGGACAGTTTAGCAAAAGGCATGGACCG
GCAGACTGTGTCTATGGCAATTAATGAAGTCTTTAATGAACCTTATATTAGATGTGTTAAAG
CAGGGTTACATGATGAAAAAGGGCCACAGACGGAAAAAACTGGACTGAAAAGATGGTTTGT
CTAAAAACCAACATAATTTCTTACTATGTGAGTGAGGATCTGAAGGATAAGAAAGGAGAC
ATTCTCTTGGATGAAAAATGCTGTGTAGAAAGTCTTGCTGACAAAAGATGGAAGAAAT
GCCTTTT

13725.1

GACTGGTCTTTATTTCAAAAAAGACACTTGTCAATATTCAGTRTCAAAACAGTTGCACTATT
GATTTCTCTTTCTCCCAATCGGGCCCCAAAAGAGACCACATAAAAGGAGAGTACATTTTAAAGC
CAATAAGCTGCGAGGATGTACACCTAACAGACCTCTAGAAACCTTACCAGAAAATGGGGA
CTGGGTAGGGAAGGAAACTTAAAGATCAACAACTGCCAGCCACGGACTGCAGAGGCT
GTCACAGCCAGATGGGGTGGCCAGGGTCCACAAACCCAAAGCAAAAGTTTCAAAATAATA
TAAAAATTTAAAAAGTTTGTACATAAGCTATTCAAGATTTCTCCAGCACTGACTGATACAA
AGCACAAATTGACATGCCACTTGTAGAGACAGCACCTTCAAAACCCAGAAAAAGGGTGATGAG
ATGAAGTTTCACATGGCTAAATCACTGGCAAAAACACAGTCTTCTTCTTCTTCTTCTTCAA
GGANGCAGGAAAAGCAATTAAGTGTCACTTAACATAAGGGGGAC

13725.2

TGGGTGGCCACCATGGCTGGGATCACCACCATCGAGCCGGTGAAGCCCAAGATCCAGGTT
CTGCAGCAGCAGGACATGATCCAGAGGAGGAGCTGAGCCGCTCCAGCGAGAAGTTGA
GGGAGAAAGCCGGCCCGCCGAAACAGGCTGAGGCTGAGGTGGCCCTCTTGAACCGTAGGA
TCCAGCTGGTTGAAGAAGACCTGGACCGCTCCTCAGGAGCCGCTGGCCACTGCCCTGCAAA
AGCTGGAAAGAAGCTGA AAAAGCTCTGTATGAGACTGAGAGAGGTATGAAGOTTATTGAA
AAGCCGGGCTTAAAAAGATCAAGAAGATGCAACTCCAGGAAATCCAACCTCAAAAGAGC
TAAGCACATTCAGAAAGAGCCAGATAGCAAGTATGAAGAGGTGGCTCGTAAGTTGCTGAT
CATTGAAGGAGACTTGAACCCGACAGAACGAACGAGCTTGACCTTGGCAAAAGTCCCGT
TGCCAGAGATGGGATGAACAGATTAGACTGATGGACCANAACC

13726.1&2

AGGGGCGNGCGGCTGCGTGGGCCACTGGGTGACCGACTTAGCCTGGCCAGACTCTCAGCAC
CTGGAAGCGCCCCGACAGTGACAGCCTGAGGCTGGGAGGGAGGACTTGGCTTGAGCTTGT
TAAACTCTGCTCTGAGCCTCTTGTGCGCTGCAATTAGATGCTCCCGCAAAAGAGGGTGG
CGAGAAGAAAAAGGGCGCTTGTGCTATCAACGAAGTGGTAACCCGAGAAATACACCATCAA
CATTCACAAGCGCATCCATGAGTGGCTTCAAGAAGCGTGACCTCGGGCACTCAAAGA
GATTGCGAAATTTGCCATGAAGGAGATGGGAACCTCCAGATGTCCGCAATTGACACCGAGGCT
CAACAAAGCTGTCTGGCCCAAGGAATAACGAATGTGCTATCCGAATCCGGTGTGGCGC
TGTCCAGAAAACGTAAATGACGATGAAGATTACCAAAATAAGCTATATACTTTGGTTACCTA
TGTACCTGTTACCACTTTCAAAAAATCTACAGACAGTCAATGTGGATGAGAACTAATCGCTG
ATCGTCAGATCAATAAAATTAATAAAT

FIG. 150

13727.1

TCGGGAGCCACACTTGGCCCTCTTCTCTCCAAAGSGCCAGAACCTCCTTCTCTTTGGAGAA
TGGGGAGGCCCTCTTGGAGACACAGAGGGTTTCACCTTGGATGACCTCTAGAGAAATTGCC
CAAGAAGCCACCTTCTGGTCCCACCTGCAGACCCACAGCAGTCAGTTGGTCAGGCCCT
GCTGTAGAAGGTCACCTGGCTCCATTGCTGTCTCCAAACCAATGGGCAGGAGAGAAGGCC
TTTATTTCTCGCCACCCATTCTCTGTACCAGCACCTCCGTTTTAGTCAGTGTGTGCCA
GCAACGGTACCGTTTACACAGTCACCTCAGACACACCAATTCACCTCCCTTGCCAAGCTGT
TAGCCTTAGAGTGATTGCAGTGAACACTGTTTACACACCGTGAATCCATTCCCATCAGTCC
ATTCCAGTTGGCACCGCCTGAACCAATTTGGTACCTGGTGTAACTGGAGTCCTGTTTACA
AGGTGGAGTCGGGGCTTGTGACTTCTCTTCAATTTAGGGGCAC

13727.2

ACCTAGACAGAAGGTGGGTGAGGGAGGACTGGTAGGAGGCTGAGGCAATTCCTTGGTAGT
TTGTCCTGAAACCCCTACTGGAGAAGTCAGCATGAGGCACCTACTGAGAGAAGTGCCGAGA
AACTGCTGACTGCATCTGTAAAGAGTTAACAGTAAAGAGGTAGAAGTGTGTTTCTGAATCA
GAGTGAAGCGTCTCAAGGGTCCCACAGTGGAGGTCCCTGAGCTACCTCCCTTCCGTGAGT
GGGAAGAGTGAAGCCCATGAAGAAGTGAAGTGAAGCAAGGATGGGGTTCCTGGGCTCCA
GGCAAGGGCTGTGCTCTCTGAGCAGGGAGCCCAAGAGTCAGAAGAAAAGAACTAATCA
TTTGTGCAAGAAACCTTGGCCGATACTAGCGGAAAACCTGGAGCGGNGGTGGGGGCAC
AGGAAAGTGAAGTGATTTGATCCAGAGCAGAGAAGCCTATGCACAGTGGCCGACTCCAC
TTGTAAGTG

13728.1&2

TTCAAGCAATTGTAACAAGTATATCTAGATTAGAGTGACCAAAATCATATACAAATTTTCAT
TTCCAGTTGCTATTTTCCAAATTTCTCTTAATGTCTTAAATTAATTAATAAATAACAAA
GCCAAAATTAATTTATGACAAGAAAGCCATCCCTACATTAATCTTACTTTTCCACTCAC
CGGCCCCATCTCTCTCTCTTTTCTTAAGTATGCCATTAATAAGTGTCTACTGGCCCGGGCG
TGTGCTCATGCTGTAAATCCAGCAATTTGGCAGCCCAAGGCAGCGGATCATGAGGTC
AAGAGATTGAGACCATCTGGCCACATGCTGAACCCCGCTCGACTAAGAATACAAA
ATTAGCTGGCATGGTGGCCATGCTGTAGTCTCAGCTACTCGGAGGCTGAGGCAGAA
GAATCGCTTGAACCCGGGAGGCAGAGGATCCAGTGAGCCCGATCGGCCACTGCACTCT
AGCCTGGCCGACAGACTGAGACTCTGCTC

13731.1&2

TGTGCCAGTCTACAGCCCTATCAGCAGGACTCTTCAGCAACAGATGGGGTCCCCTGTTT
AGCCCAACCCCATGAGCCCCAGCAGCATATGCTCCCAATCAGGCCAGTCCCCACACCT
ACAAGGCCAGCAGATCCCTAAATCTCTCTCAATCAAGTGGCTCTCCCCAGCCTGTCCCTT
CTCCACGGCCACAGTCCCAGCCCCCACTCCAGTCTTCCCAAGGATGCAGCCTCAGCC
TTCTCCACACCACGTTTCCCAACAGACAAGTTCCCAACATCCTGGACTGGTAGTTGCCAG
GCCAACCCCATGGAACAAGGCCATTTTCCAGCC

FIG. 15P

13734.1&2

TGTA AAAA ACTTGT TTTTAA TTTTGTATA AAAATAAAGGTGGTCCATGCCCCACGGGGGCTGTAG
 GGAAATCCAAAGCAGACCAGCTGGGGTGGGGGGATGTAGCCTACCTCGGGGGACTGTCTGT
 CCTCAAAACGGGCTGAGAAGGCCCGTCAGGGGGCCAGGTCCCACAGAGAGGCCTGGGATA
 CTCCCCCAACCCGAGGGGCAAGACTGGGCAGTGGGGAGCCCCCATCGTGCCCCAGAGGTGG
 CCACAGGCTGAAGGAGGGGCCCTGAGGCACCGCAGCCTGCAACCCCCAGGGCTGCAGTCCA
 CTAAC TTTTACAGAATAAAAGGAACA TGGGCA TGGGGA AAAAAGCACCAGGTGAGGCA
 GGGCCCGAGGGCCCCAGATCCAGGAGGGCCAGGACTCAGGATGCCAGCACACCCTAGC
 AGCTCCACAGCTCCTGGCACAGGAGGCCGCCACGGATTGGCACAGGCCGCTGTGGCCA
 TCAGGCCACATTTGGACA ACTTGTCCGACAGAGGTGAGCTCGGAGGAGCTCCTCGTGGGC
 ACACACTGTACGAACACAGATCTCCTTGTAA TGACGTACACACGGCGGAGGCTGCGGGG
 ACAGGGCACGGGAGGTCTCAGCCCCACTT

13736.2

ATGGCTGCTGGATTTAGGTGGTAATAGGGGCTGTGGGCCATAAATCTGAAGCCTTGAGAA
 CCTTGGGTCTGGAGAGCCATGAAGAGGGAGGAAAAAGGGCAAGTCTGAACCTAACC
 AATGACCTGATGGATTGCTCGACCAAGACACAGAAAGTGAAGTCTGTGTCTGTGCACTTCCC
 ACAGACTGGAGTTT TGGTGGTGAATAGAGCCAGTTGCTAAAAAATTGGGGGTTTGGTGA
 AGAAATCTGATTGTGTGTGTAATCAATGTGTGATTTTAAAAATAAACAGCAACAACAATA
 AAAACCTGACTGGCTGT TTTTCCCTGTATTTTACAACATA TTTTGGACCCTCTGAAAA
 TTATTATACTTCACCTAAA TGGAACTGCTGTGTGTGTGGAAATTTTGTAA TTTTAAAT
 TATTTTATCTCTCTCTTTTATTTTCCCTGCAGAAATCCGTTGAGAGACTAA TAAGGCTTA
 ATA TTTAATTGATTTGT TAAATGTATATAAAT

13744.2-13696.2

GGCATCGGAGCCCACTCGGCTGGACGCAAGGGCGGGGGGAGCACACGGAGCACTGCAGG
 CGCGGGTTGGGACACGGCTCTTGGTCTGCTGGGATAGTGTGT TTTTGGGGATCGAGGAT
 ACTCACCAGAAACCGA AAAATGCGGAAACCAATCAATGTCCGAGTTACCACCATGGATGCA
 GAGCTGGAGTTTGGCAATCCAGCCAAATACAACTCGA AAAACAGCTTTTGTATCAGGTGCTA
 AAGACTATCGGGCTCCGGGAAGTGTGGTACTTTGGCTCCACTATGTGGATAATAAAGGAT
 TTCTACCTGGCTCAAGCTCGATAGAAAGCTGTCTGCCAGGAGGTCAGGAAGGAGAAATC
 CCGTCCAGTTCAAGTTGGGGGCCAAGTTCTACCTGAAGATGTGGCTGAGGAGCTCATCC
 AGGACATCACCAGAAACTTTTCTTCTCAAGTGAAGGAAGGAATCCTTAGCGATGACAT
 CTACTGCCCCCTTGARACTGCGGTGCTCTTGGGGTCTACGCTTGTGCATGCCAAGTTTGG
 GGACTACCACCAACAAG

13746.1&2-13720.1&2

GAAGGAGTGGGATACTCAGCAATTGATGCAACCCCAATTTCAAAGCGGCATTCTTGGGCAG
 GTCTCTGGGACAAATCTCTAGGGTCACTACCTGCAAACTCGTTAGGGTACAACCTGAATGCTG
 AAAGCAAAAGAACCTGCAGAACGGACACAAAATTCACCCCGGCGATCAGCTGATTGATC
 TCGGTGCAACAGAAAGTCATGGGTAAAGATGACGAGGACGTTGTCAATTCCTTGGGCTTTTC
 GAAGTGAGTCCAGCAGCACTGTGAGGTATTCGGCGCGGTTATGCCACCTGGACCACAGCA
 CCAGCTCCCCGGGGGGCCAGGTGCCAGGCTTATCTACATTCTCAGGGTCTGATCAAAGTT
 CAGCTGGTACACCAGGCACCGGTACCCACGGTCAGGTTGTCCGCTCGGGCTGGGGGACC
 GCGGGACACAGGAAGCGGCGGACAGCTTGGACACCTGCGGATGCCACAGCCACAGAG
 GGGTCTCCCCACCGGGCGGGGACCGGGCGGGGTTGCGGCTCCAGCAACGGTGGG
 GCGAGGGCTCTGTTCTTCTTTGTGCGCAATGCTGCTCCAGAGGACGAAGCGCGCAGGCGG
 CCACCACGACCGTCAGGATTACCACTTCCGTTGTAGATCGGGAACCTCATGGTCTCCAG
 GGCGGGAGCGCAGCTACAGCTCGAGCGTCCGGCGCGCGCTAGGAGCGCGGCTCGGCT
 TCGTCTCGGTCTCTCAATTCAGCAACCGGTCGCGGAAAAAGCTCAGGCGCGGTCGCA
 CCGCACCTAGCTTCTTACCTGCGGCTCGCTTG

FIG. 15Q

14347.1

CAGATTTTATTTGCAGTCGTCACCTGGGGCCGTTTCTTGCTGCTTATTTGTCTGCTAGCCTG
CTCTTCCAGCTGCCATGGCCAGGCCCAAGGCCCTTGATGACATCTCGCAGGGCTGAGAAATGC
TTGGCTTGCTGGGCCAGAGCAGATTCCGCTTTGTTACAAAAGGTCTCCAGGTCATAGTCTG
GCTGCTGGGTATCTCAGAGAGCTCAAGCCAGTCTGGTCTTGCTGTATGATCTCCTTGAG
CTCTTCCATAGCCTTCTCCTCCAGCTCCCTGATCTGAGTCATGGCTTCTGTTAAAGCTGGACA
TCTGGGAAGACAGTTCTCCTCTTCTCTTGGATAAATTGCCTGGAAATCAGCGCCCCGTTAGA
GCAGGCTTCCATCTCTTCTGTTTCCATTTGAATCAACTGCTCTCCACTGGGCCCACTGTGGG
GGCTCAGCTCCTTGACCCTGCTGCATATCTTAAGGGTGTAAAGGATATTCACAGGAGCT
TATGCCTGGT

14347.2

CTCCTCTTGGTACATGAACCCAAAGTTGAAAGTGGACTTAACAAAGTATCTGGAGAACCAA
GCATTCTGCTTTGACTTTGCAATTTGATGAAAAGCTTCGAATGAAGTTGTCTACAAGTTTAC
AGCAAGGCCCACTGGTACAGACAATCTTTGAAGGTGGAAAAGCAACTTGTTTGCATATGG
CCAGACAGGAAGTGGCAAGACACATCTATGGGCGGAGACCTCTCTGGGAAAGCCAGAA
TGCATCCAAAGGGATCTATGCCATGGCCTTCCGGGACGTCTTCTTCTGAAGAATCAACCCT
GCTACCGGAAGTTGGGCTGGAAGTCTATGTGACATTTCTCGAGATCTACAAATGGGAAGCT
GTTTGACCTGCTCAACAAGAGGCCCAAGCTTGGCGTCTGGAAGACGCCAAGCAACAGG
TGCAAGTGGTGGGGCTTGCAGGAACATCTGGNTAACTCTGCTTGATGATGGCANTCAAG
ATGATCGACATGGGCAGGCCCTGCAGA

14348.2&14350.1&2

TCCCGAATTCAGCCACAAAATTGGAWACTGAAAATGGAAGATGCCTATCATGAACATCAGG
CAAAATCTTTTGGCCCAAGAATCTGATGAGACGACAGGAAGAATTAAGACGCCATGGAAAGAAC
TTCAAAATCAAGAAAATCCAGAAAAGCTAAAGAAAATGCCAATTGAGGCCAAGAGGAGGAACGA
CGTAGAAGAGAGGAAGACATGATCAATTCCTCAACGTGAGATGGAAGAACAAATGAGGGC
CCAAAGAGAGGAAAGTTACAGCCCAATGGGCTACATGGATCCACGGGAAAGACATGC
GAAATGGGTGGCGGAGGAGCAATGAACATGGGAGATCCCTATGTTACAGGAGGCCAGAAA
TTTCCACCTCTAGGAGGTGCTGCTGGCATAAGCTTATGAAGCTAATCCTGGCGTTCCACCAG
CAACCATGAGTGGTTCCATGATGGCAAGTGACATGCTACTGAGCCCTTTGGGCAGGGAG
GTGCGGGGCTGTGGGTGGACAGGGTCTACAGGAATGGGGCCTGGAACCTCCAGCAGGAT
ATGGTAGAGGGAGAGAAGAGTACGAAGCC

14349.1&2

TTCTGTAAGACCCCTGACTGGTAAGACCATCACTCTCGAAGTGGAGCCCGAGTGACACCAAT
GAGAAATGTCAAAGGCAAAAGATCCAAAGACAAGGAAGGCATCCCTCCTGACCAGCAKAGGTTG
ATCTTTGCTGGGAAACAGCTGGAAAGATGGACCCACCCCTGTCTGACTACAAACATCCAGAAA
GAGTCCACCCCTGCACCTGGTGGCTCCCTCTCAGAGGTGGGATGCAAAATCTTCTGTAAGACCC
TGACTGGTAAGACCATCACCCCTGAGGTGGAGCCCAAGTCACACCAATCGAGAATGTCAAGG
CAAAGATCCAAAGATAAGCAAGGCATCCCTCTGATCAGCAGAGGTTGATCTTTGCTGGGA
AACAGCTCGGAAGATGGACGCCACCCCTGTCTGACTACAACATCCAGAAAGAGTCCACTCTGC
ACTTGGTCTGCGCTTGACGGGGGCTGTCTAAGTTTCCCTTTTAAAGGTTTCAACAAATTC
ATTGCACTTTCCTTTCAATAAAGTTGTTCATT

FIG. 15R

14352.1&2

GCGCGGGTGCGTGGGCCCCTGGGTGACCGACTTAGCCTGGCCAGACTCTCAGCACCTGGA
 AGCGCCCCGAGAGTGACAGCGGTGAGGCTGGGAGGGAGGACTTGGCTTGAGCTTGTTAAAC
 TCTGCTCTGAGCCTCCTTGTCCCTGCA TTTAGATGGCTCCCGCAAAGAAGGGTGGCGAGA
 AGAAAAAGGGCCGTTCTGCCATC.AACGAAGTGGTAACCCGAGAA TACACCATCAACATTC
 ACAAGCGCATCCATGGAGTGGGCTTCAAGAAGCGTGACCTCGGGCACTCAAAGAGATTC
 GGAAATTTGGCATGAAGGAGATGGGAACTCCAGATGTGGCATTGACACCAGGCTCAACA
 AAGCTGTCTGGGCCAAAGGAATAAGGAATGTGCCATACCGAATCCGTGTGGGCTGTCCA
 GAAAACGTAATGAGGATGAAGATTCACCAAATAAGCTATATACTTTGGTTACCTATGTACC
 TGTACCACCTTTCAAAAATCTACAGACAGTCAATGTGGATGAGAACTAATCGCTGATCGT

14353.1

AATTCCTTATTTAAATCAACAACTCATCTTCTCAAGCCCCAGACCATGGTAGGCAGCCC
 TCCCTCTCCATCCCCCTACCCACCCCTTAGCCACAGTGAAGGGAA TGGAATAAGAGAGC
 CACGAGGGCCCCCTGCCAGGGAAGGCTGCCCCAGATGTGTGGTGAGCACAGTCAGTGCAGC
 TGTGGCTGGGGCAGCAGCTGCCACAGGCTCCTCCCTATAAAATTAAGTTCTGCAGCCACAG
 CTGTGGGAGAAGCATACTTGTAGAAGCAAGGCCAGTCCAGCATCAGAAGGCAGAGGCCAG
 CATCAGTGACTCCAGCCATGGAAATGAACGGAGGACACAGAGCTCAGAGACAGAACAGG
 CCAGGGGGAAGAAGGAGAGACAGAA TAGGCCAGGCCATGCGGTGAGGGA

14353.2

TGATGAATCTGGGTCCGCTGGCAGTAGCCCCAGATGATGGGCTCTTCTCTGGGATCCCAA
 CTGGTTCCCTAAGAAA TCCAAAGGAGAACTCTCGGAATCTCGGATAACCACCTGCAAGA
 GGCCAAAGAACGTGATCCGCTTACAGATGGGCACCAACCCGGGGCGTCTCANGCAGGCAT
 GACTGGCTACGGCATGCCAGGCCAGATCCTCTGATCCCAAGCCAGGCCCTTCCCCCTGCCCT
 CCCACGAATGGTTAATATATATATATATATATTTAGCAGTGACATTCACAGAGCCCC
 CAGAGCTCTCAAGCTCCTTCTGTACGGGTGGGGGGTTCAAGCCTGTCTGTACCTCTGA
 AGTGCTCTGTGGCATCCTCTCCCCCATGCTTACTAATACATTCCCTTCCCCATAGCC

17182.1&2

AGCGGAGCTCCCTCCCTGGTGGTACAACCCACACAGGCCAGGCTCAGGCATCGAGCAG
 AACTCCAGCGACTGGGTAAACCACTGACATTCAGGTGAAGGTGCGGACACCTACCTGGAT
 ACACAGGTGGTGGGACAGACAGGTGTCATCCGCAGTGTACGCGGGGCGATGTGCTGTG
 TACCTGAAGGACAGTGAGAAAGTTGTAGCAATTCAGTGAAGCACCTGGAGCCTATCACCC
 CCCACCAAGAACAACAAGGTGAAGTATCTGGGCGAGGATCGGGAAGCCACGGGGCGT
 CCTACTGAGCAATTCATGGTGAGCATGGCAATGTCCGTATGGACCTTGATGAGCAGCTCAAG
 ATCCTCAACCTCCGCTTCTGGGGAAGCTCCTGGAAGCCTGAAGCAGGCAGGGCCGGTGG
 ACTTCGTGGGATGAAGAGTCACTCCTTCTTCCCTGGCCCTTGGCTGTGACACAAGATC
 CTCCTGCAGGGCTAGCCGATTTCTGTGATTTCCTTTGTTTTCTTTTAGGTTTCCATCT
 TTTCCCTCCCTGGTCTCATTCGAATCTGAGTAGAGTCTGGGGAGGGTCCCCACCTTCCT
 GTACCTCCTCCCCACAGCTTCTTTTGTGTACCGTCTTTCAATAAAAAGAACCTGTTTGGT
 CTA

FIG. 15S

17183.2

GGTTCACAGCACTGCTGCTTGTGTGTTGCCGGCCAGGAATTCCAGGCTCACAAGGCTATCT
TAGCAGCTCGTTCTCCGGTTTTAGTGCCATGTTTGAACATGAAATGGAGGAGAGCAAAAA
GAATCGAGTTGAAATCAATGATGTGGAGCCTGAAGTTTTAAAGGAAATGATGTGCTTCATT
TACACGGGGAAGGCTCCAAACCTCGACAAAATGGCTGATGATTTGCTGGCAGCTGCTGAC
AAGTATGCCCTCGAGCGCTTAAAGGTCAATGTGTAGGATGCCCTCTGCAGTAACCTGTCCG
TGGAGAACGCTGCAGAAATCTCATCCTGGCCGACCTCCACAGTGCAGATCAGTTGAAAA
CTCAGGCAGTGGATTTCATCAACTATCATGCTTCGGATGTCTTGGAGACCTCTTGGG

17186.1&2

TCGTAGCCATTTTTCTGCTTCTTTGGAGAATGACGCCACACTGACTGCTCATTGTGCTTGGT
TCCATGCCAATTGGTGAAATAGAACCCTCATCCGGTAGTGGAGCCGGAGGGACATCTTGTG
ATCAACGGTGATGGTGCGATTGGAGCATACAGAGCTTGGTGTCTCGCCATACAGGGCA
AAGAGCTTGTGACAAAGAGGAGAGATACGGCATGCCCTGTGCAGCCCTGATGCACAGTTCC
TCTGCTGTGTAATCTTCCACTGCCAGCCGAGGGGGCTCCCTGTCCGACAGATAGAAGATCA
CTTCCACCCCTGGCTTG

17187.1&2

TGGCAGCTGCTCTTAAAGAACTATGAWGATCTGAGATTTTTTGTGTATGTTTTGACTCT
TTTGAGTGGTAATCATATGTGTCTTATAGATGTACATACCTCCTTGCACAAATGGAGGGG
AATTCATTTTCATCCTGGGAGTGCTCTTAGTGTATAAAAACCATGCTGCTATATGGCTTC
AAGTTGTAATAAGTGAAGTGAATTAAGGAAATAGGGGATGGTCCAGGATCTCCACTG
ATAAGACTGTTTTAAGTAACCTAAGCAACCTTGGGTCTACAAGTATATGTGAAAAAATG
AGACTTACTGGCTCAGGAAATTCATTCGTTAAAGATGGTCTGTGTGTGTGTGTGTGTG
TGTCTG
ACTGKGTAAATATATGTGTATATCATCTTCTTGTGTGTGTGTGTGTGTGTGTGTGTGTGTG
AGTWCTARATGCMTCCTGGGNTTGAATTCMAGATATTGATGATAMCCCTTAAAT
GTAACCYGCCTTTTCCCTTTCCTYTCTMAATTAAGTCTATTCMAAAG

17191.1&39.1

GGGGTAGGCTCTTTATTACAGGCTTATTCCTGTACTACAGGCTCAGAGTGCAGTGTAAAGC
AGTGTACAGAGCCCCGCTTCAGCCCAAGATGTGGATTTTCTCTCCCTATTGATCACAGTG
GGTGGCTTTCTTCAGAAAAGCCCCACAGGCCAGGGACAGTGAAGCTCCAAGGTTAGAAAGTG
GAACTGGAAGGCTTCAGTCAATGCTGCTTCCACGCTTCCAGGCTGGGCAGCAAGGAGGA
GATGCCCCATGACGTGCCAGGTCTGCCATCTGACACCAAGTGAAGTCTGGTAGGACAGCAG
CCGCACGCTGCTCTGCCAGGACGCCAATCATGCTAGGCACCAATTGCAGGGTCAGAGGT
CTGAGTCCGGAATAGGAGCAGGGGACGCTCCCTGCCGAGAGGCACTTCTGCCCTGAAGAC
AGCTCCATTGAGCCCCCTGCAGTACAGGCTGTAGTCCCTTGGACCAAGCCCACAGCCTGGTA
AGGGGCCCTCCAGGGCCACGGCCAGGAGCA

FIG. 15T

17192.1&2

TAATTTCTTAGTCGTTTGGAAATCCTTAAGCATGCCAAAAGCTTTGAACAGAAGGGTTACAA
 AGGAACCAAGGGTTGTCTTATGGCATCCAGTTAAGCCAGAGCTGGGAATGCCTCTGGGTCA
 CCACATCAGGAGCAGAAGCACTTGACTTGTGGTCTGCTGCCACGGTTTGGGCGCCACC
 ACGCCACGTCCACCTCGTCTCCCTGCCGSCACGTCTGGGCGGCAAGGTCTCCAAA
 TTGATCTCCAGCTGAGACGTTATATCAATTTGCTGGCTCCGGAAAATGATGGTCCATAACCG
 AATCTTCAGCATGAGCCTCTTCACTCTTTGATTTATGAAGAACAATCCCTTCTTCCACTGC
 CCATCAGCACCTTCAATTTGGTTTTCGGATATTAAATTCTACTTTTGCCCGGTCTTATTTGA
 ATAGCCTTCCACTCATCCAAAAGTCATCTCTTTGGACCTCTCTTTTACCTCTTCAACTTCA
 TTCTCCTTATTTTCAGTGTCTGCCACTGGATGATGTTCTTCACTTCCAGGTGTTTCTCAGTC
 ACATTTGATTGATCCAAAGTCAGTTAATTCGTCTTTGACAGTTCCCAAGTTGTGAGATCCGCT
 ACCTCCACGTTTGTCTCGTCTTCAAGCCAGATCTATCACTTCCACTATGCCATCAAAAT
 CACGTTTGGCCACGAGAATCAATCCATCTCTCGGCCCAATCCACGTCCACGGCCCCCTCG
 ACCTCTTCCAAGACCACCACGACCTCGAATAGGTCGGTCAATAATCGGTCTATCAACTGAA
 AATTCGCTCTTCACTCTTTTCTTCAAGTGGCTTTTTCGAATCTTCGTTACGAGGTGGTGG
 CCTTTCTGGTCTTCTATCAATTAATTTCCCTTCACTTGAAGTTGTTGATCAGGTCTTCTTCC
 AACTCGTGC

17193

AAGCGGATGGACCTGACTCAGCCGAATCCTAGCCCCCTTCCCTTGGGCTGCTGTGGTCTC
 GACATCAGTGACAGACGGAAGCCAGCAGCATCAAGGCTACGGGAGCCCCGGGGGCTT
 GCGAAGATGAAGTTTGGCTGCCCTCTCTTCCGGCAGCCTTATGCTGGCTTTCTTAAATG
 GAATCAAGACTGTGGAGACGGCTGGCTCTGCTGAGCAGCCAGCGGAAGTGTACCA
 TCCCGCTCCACATTTCTCAGCGGACTGGGAAGCGGATGCTGTGGGAGCTGCTGGTGG
 AGAGACTCGGATGACTCTCTCTCAGATTCAGGCTTCTCAGGAAAAGGGGAAAAGTTTG
 GTCGAGGACTGATAGCGGGACTCTCTGACATTTGGGAAAACCTTTGCAATGCCCGAAGACT
 TAACTCCCGATCAGGTTCTCGAACTAGAAAATCAAGCTGCACTGACCAACCTGAAGCAGA
 AGTACCTGACTGTGATTTCAAAACCCAGGTGCTTACTGGAGCCCATACCTTGGAAAGGAG
 GCAAGGATGTATTTCCAGGTAGACATCCAGACCCACTCATCCCTTTGGGGCATGAAGTGT
 GACAAGTGTGGGCTCTGAAAAGCAATGTTCCRGAGAAAACAGCTAAATCATGGCACCTTC
 AATTTGCCATCCTGACCCAGACCTGTATAAAATTAGCTTAAAGATGAATTTCCACTGCTTTG
 GAGAGTCCCACCCACTAAGCACTGTGCAATGTAACAGGTTCCTTTGCTCAGATGAAGGAA
 GTAGGGGCTGGGGCTTTCTTTGTGTATGCTCTCTTAGCCACACAGCCAATGTCTCAAGTA
 CTTTGACCTTAGGGTAGAAGCCAAAAGCTGCCAGTAAATGTCTCAGCATTCCTGCTAAATTT
 GGTCTGCTAGTTTCTGCAATTGTACAAAATAATGTGTGTACATGA

FIG. 15U

16443.1.edit

TCGAGCGGCGCGCGGGC.AGGTGTGCGGAGTCCAGCACGGGAGGCGTGGTCTTGTAGTTGT
TCTCCGGGTGCCCCATTGCTCTCCC.ACTCCACGGCGATGTGCGTGGGATAGAAGCCTTTGAC
CAGGCAGGTGAGGCTGACCTGGTTCTTGGTCA.TCTCCTCCGGGATGGGGGCAGGGTGTAC
ACCTGTGGTTCTCGGGCTGCCCTTTGGCTTTGGAGATGGTTTTCTCGATGGGGGCTGGGA
GGGCTTTGTTGGAGACCTTGCACTTGTACTCCTTGCCATTCAACCAGTCCTGGTGCANGAC
GGTGAGGACGCTNACCACACGGTACGNGCTGGTGTACTGCTCCTCCCGGGCTTTGTCTTG
GCATTATGCACCTCCACGGCGTCCACGTACCAATTGAACCTGACCTCAGGGTCTTGTGGC
TCACGTCCACCACCACGCATGTAACCTCAAANCTCGGNCGGANACGC

16443.2.edit

AGCGTGGTGGCGCGGAGGTCTGAGGTTACATGCGTGGTGGTGGACGTGAGCCACGAAGA
CCCTGAGGTCAAGTTCAACTGGTACGTGGACGGCGTGGAGGTGCATAATGCCAAGACAAA
CGCGCGGAGGAGCACTAC.AACAGCACGTACCGTGTGGTCAAGCTCCTCAGCGTCTGCA
CCAGGACTGGCTGAATGGCAAGGAGTACAAGTGCAAGGTCTCCAACAAAGCCCTCCAGC
CCCCATCGAGAAACCATCTCC.AAAGCCAAAGGGCAGCCCCGAGAACCAACAGGTGTACAC
CCTGCCCCCATCCCCGGCAGGAGATGACCAAGAACCAGGTGACGCTGACCTGCCTGGTCAA
AGGCTTCTATCCCAGCGACATCGCCCCGTGGAGTGGGAGAGCAATGGGCAGCCGAGAAACA
ACTACAAGACCACGCCCTCCCGTGTGGACTCCGACACCTGCCGGCGGGCGCTCGA

16444.2.edit

AGCGTGGTTNCGCGCGAAGCTCCCAACCAAGGCTGCANCTGGATGCCATCAAAGTCTTCTG
CAACATGGAGACTGGTGAGACCTGGCTGTACCCCACTCAGCCCACTGTGGCCAGAGAA
CTGGTACATCAGCAAGAAGCCCAAGGACAAAGAGCCATGTCTGTTCCGGAGAGCATGAC
CGATGGATTCCAGTTCCACTATGCCCGCCAGGGCTCCGACCCTGCCGATGTGGACCTGCCC
GGCGCGNCGCTCGA

16445.1.edit

AGCGTGGTGGCGCGCGAGCTCAAGAAGTCCCGCGCACCTGCCGTGACCTCAAAGATGTGC
CACTCTGACTGGAAGACTGCAGACTCTGGAATGACCCCAACCAAGGCTGCAACCTGGAT
GCCATCAAAGTCTTCTCCAACATGGACACTGGTGAGACCTGCGTGTACCCCACTCAGCCCA
GTGTGGCCCAAGAAGAAGTGTACATCAGCAAGAAGCCCAAGGACAAAGAGCCATGTCTGGT
TCGGCGAGAGCATGACCGATGGATTCCAGTTCCAGTATGGCGGCCAGGGCTCCGACCTG
CCGATGTGGACCTGCCCGCGCGCCGCTCGA

FIG. 15V

16445.2.edit

TCGAGCGGTCGCGCGGGCAGGTCCACATCGGCAGGGTCGGAGCCCTGGCCGCCATACTCG
AACTGGAATCGATCGGNCATGCTCTCGCCGAACCAGACATGCCTCTTGNCCTTGGGGTTCT
TGCTGATGTACCAGNTCTTCTGGGCCACACTGGGCTGAGTGGGGTACACGCAGGTCTCACC
ANTCTCCAATGTTGCANAAGACTTTGATGGCATCCAGGTTGCAGCCTTGGTTGGGGTCAATC
CAGTACTCTCCACTCTTCCAGACAGAGTGGCACATCTTGAGGTCACGGCAGGTGCGGGCGG
GGTCTTGACCTCGGTGCGGACCACGCT

16446.1.edit

TCGAGCGGCCCGCGGGCAGGTCTCTCAGAGCGGTAGCTGTTCTTATTGCCCCGGCAGC
CTCCATAGATNAAGTTATTGCANGAGTTCTCTCCACGTCAAAGTACCAGCGTGGGAAGG
ATGCACGGCAAGGCCAGTGAAGTGGCGGTGCAGTATTCTTCATAGTTGAACATATC
GCTGGAGTGGACTTCAGAACTCTGCTTCTGGGAGCAGTGGGACAGAGGAATCCGCTGC
ATTCTGCTGGTGGACCTCGCCCGGACCACGCT

16446.2.edit

AGCGTGGTCGCGGGCGAGGTCCACCAGCAGGAATGCAGCGGATTCCTCTGTCCCAAGTGC
TCCCAGAAGGCAGGATTCTGAAGACCACTCCAGCGATATGTTCAACTATGAAGAACTG
CACCGCCAACGCAGTCACTGGGCTTGGCGTGCACTCTCCACGCTGGTACTTTGACGTG
GAGAGGAACTCTGCAATAACTTCATCTATGGAGGCTGCCGGGGCAATAACAACAGCTAC
CGCTCTGAGGAGGACCTGCGCGGGGGGGCTCGA

16447.1.edit

TCGAGCGGCCCGCGGGCAGGTCCACATCGGCAGGGTCGGAGCCCTGGCCGCCATACTCG
AACTGGAATCGATCGGTGATGCTCTCGCCGAACCAGACATGCCTCTTGCTTGGGGTTCT
TGCTGATGTACCAGTTCTTCTGGGCCACACTGGGCTGAGTGGGGTACACGCAGGTCTCACC
AGTCTCCATGTTGCAGAGACTTTGATGCCATCCAGGTTGCAGCCTTGGTTGGGGTCAATC
CAGTACTCTCCACTCTTCCAGCCAGAAATGGCACATCTTGAGGTCACGGCANGTGGGGCGG
GTTCTTGACCTCGCGGGGACCACGCT

FIG. 15W

16447.2.edit

AGCGTGGTGGCGGGCGAGGTCAAGAAACCCCGCCGACCTGCCGTGACCTCAAGATGTG
 CCACTCTGGCTGGAAGAGTGGAGAGTACTGGATTGACCCCAACCAAGGCTGCAACCTGGA
 TGCCATCAAAGTCTTCTGCAACATGGAGACTGGTGAGACCTGCCGTGACCCCACTCAGCCC
 AGTGTGGCCCAAGAAAGTGGTACATCAGCAAGAAACCCCAAGGACAAAGAGGCATGTCTGG
 CTCGGCGAGAGCATGACCGATGGATTCCAGTTCCAGTATGGCGGCCAGGGCTCCGACCCT
 GCCGATGTGGACCTGCCCGGGCGGGCGCTCGA

16449.1.edit

AGCGTGGTGGCGGGCGAGGTCTGTCAAGTGGCACTGGTAGAAGNTCCAGGAACCCCTGA
 ACTGTAAGGGTTCTTCATCAGTGGCCAACAGGATGACATGAAATGATGTACTCAGAAGTGTG
 CTGNAATGGGGCCCATGANATGGTTGNCCTGAGAGAGAGCTTCTTGTCTACATTGGCGGG
 GTATGGTCTTGGCCTATGCCCTATGGCGGTGGCCGTTGNGGGCGGTGNGGTCCGCCCTAAAA
 CCATGTTCTCTCAAAGATCAATTTGTTGCCCAACACTGGGTTGCTGACCAANAAGTCCAGGAA
 GCTGAATACCATTTCCAGTGTCAATCCAGGGTGGGTGACGAAAGGGGTCTTTTGAAGTGT
 GGAAGGAACATCCAAGATCTCTGNTCCAAGAAATTGGGGTGTGGAAGGGTTACCAAGTTG
 GGAAGCTCGCTGTCTTTTCTCTCCAATCANGGGCTCGCTCTTCTGAATATTCTTCAGGGC
 AATGACATAAATGTATATTGGGTTCCCGGTTCCAGGCCAG

16450.1.edit

TGGAGCGGGCGGGCGGGCAGGTCCACACACCCAAATTCCTTCTGCTGATATCATGGCAGCCGC
 CACGTGGCAGCAATTACCCCTACATCATCAAGTATGAGAAAGCTGGGTCTCTCCAGAGA
 AGTGGTCCCTCGGGCGGGCGGGTGGTGCACAGAGGCTACTATTACTGGCCCTGGAACCGGGA
 ACCGAATATACAAATTTATGTCTATGGCCCTGAAGAAATATCAGAACAGCGAGCCCTGATTG
 GAAGCAAAAAGACAGAGAGGCTTCCCAACTGGTAACCCCTCCACACCCCAATCTTCATG
 GACCAGAGATCTTGGATGTTCTTCCACAGTTCAAAGACCCCTTCTGTCACCCACCCCTGG
 GTATGACACTGGAAATGGTATTGACCTTCTGGCACTTCTGGTCAGCAACCCAGTGTGGG
 CAACAAATGATCTTTGANGAATGCTTTAGGGCGGACCAACCGGCCACAAAGGGCCACC
 CCCATAAGGCATAGGCCAAGACATACCTGNCGAATGTAGGACAAGAAGCTCTNTCTCAN
 ACAANCACTCTATGGGGCCCAATTCANACACTTCTGAGTACATCANTTCAATGGCATCCTG
 GTGGCACTGATAAAAACCTTACAGTTA

16450.2.edit

AGCGTGGTGGCGGGCGAGGTCTGTCAAGTGGCACTGGTAGAAGTCCAGGAACCCCTGA
 ACTGTAAGGGTTCTTCATCAGTGGCCAACAGGATGACATGAAATGATGTACTCAGAAGTGTG
 CTGGAATGGGGCCCATGAGATGGTTGCTGAGAGAGAGCTTCTTGTCTACATTGGCGGG
 TATGGTCTTGGCCTATGCCCTATGGGGTGGCCGTTGTGGCGGTGTGGTCCGCCCTAAAC
 CATGTTCTCTCAAAGATCAATTTGTTGCCCAACACTGGGTTGCTGACCAAGAAGTCCAGGAAG
 CTGAATACCATTTCCAGTGTCAATCCAGGGTGGGTGACGAAAGCCCTCTTTGAAGTGTG
 GAAGGAACATCCAAGATCTCTGGTCCATGAAGATTGGGGTGTGGAAGGGTTACCAAGTTGG
 GGAAGCTCGTCTGTCTTTTCTCTCCAATCANGGGCTCGCTCTTCTGATTATTCTTCAGGGC
 AATGACATAAATGTATATTGCTNTCCCGGTTNAGGCCAATAATAAACCTCTGTGACA
 CCANGGGCGGGCGGCAAGGANCAT

FIG. 15X

16451.1.edit

AGCGTGGTCGGGGCCGAGGTCCCTACCAGAGGTACCACCTACAACATCATAGTGGAGGCA
CTGAAAGACCAGCAGAGGCATAAGGTTCCGGGAAGAGGTTGTTACCGTGGGCAACTCTGTC
AACGAAGGCTTGAACCAACCTACGGATGACTCGTGCTTTGACCCCTACACAGTTTCCCAT
ATGCCGTTGGAGATGAGTGGGAACGAATGTCTGAATCAGGCTTTAAACTGTTGTGCCAGTG
CTTANGCTTTGGAAGTGGTCATTTAGATGTGATTCTAGATGGTGCCATGACAAATGGT
GTGAACTACAAGATTGGAGAGAAAGTCGGACCGTCAGGGAGAAAATGGACCTGCCCGGGC
GCCCCGCTGA

16451.2.edit

TCGAGCGGGCCCGGGGAGGTCCATTTCTCCCTGACGGTCCCACTTCTCTCCAATCTTGT
AGTTCACACCAATTGTCATGGCACCATCTAGATGAATCACAATCTGAAATGACCACTTCCAAA
GCCTAAGCACTGGCACAACAGTTTAAAGCCTGATTACAGACATTCGTTCCCACTCATCTCCA
ACGGCATAATGGGAACTGTGTAGGGGTCAAAGCACGAGTCATCCGTAGGTTGGTTCAAG
CCTTCGNTGACAGAGTTGCCACGGTAACAACCTCTTCCGAACCTTATGCCCTCTGCTGGT
CTTTCAGTGCCCTCCACTATGATGTTGTAGGTGGTACCTCTGGTGAGGACCTCGGCCCGGAC
CACGCT

16452.1.edit

AGCGTGGCCCGGGCCGAGGTCCATTGCTGGAACGGCATCAACTTGGAAAGCCAGTGATCG
TCTCAGCCTTGGTTCTCCAGCTAATGGTGAAGGNGGTCTCAGTAGCATCTGTACACGAGC
CCTTCTTGGTGGGCTGACATTTCTCCAGACTGGTGACAACACCTTGAGCTGGTCTGCTTGT
AAAGTGCTCTTAAGAATCATAGACACTCACTTCATAATTTGGCGNCAACCATAGTCTGTATA
CAACCACGGAAATGACCTGTACGGAAC

16452.2.edit

TCGACCGGGCCCGGGGAGGTCCCTCAGACCCGGTTCTGAGTACACAGTCAGTGTTGGTTC
CTTGACGATGATATGGAGAGCCAGCCCTGATTGGAACCCAGTCCACAGCTATTCTTGCA
CCAACCTGACCTGAAGTTCACTCAGGTACACCCACAAGCCTGAGCGCCCACTGGACACCA
CCCAATGTTACGCTCACTGATATCGAAGTGGGGTGACCCCAAGGAGAAAGACCGGACCA
ATGAAAGAAATCAACCTTCTCTGACAGCTCATCCGTGGTTGTATCAGGACTTATGGCGG
CCACCAAAATATGAAGTGAGTGCTATGCTCTTAAGGACACTTTGACAAGCAGACCAGCTCA
GGGTGTTGTCAACACTCTGGAGAAATGTCAGCCCAACGAAGGGCTCGTGTGACAGATGC
TACTGAGACCACCATCAACATTAGCTGGACAAACCAAGACTGAGACCATCACTGGCTTCCA
AGTTGATGCCGTTCCACCCAATGGACCTCGGCCGGACCAACGCTT

FIG. 15Y

16453.1.edit

AGCGTGGTCCGGCCGAGGTCTGGCCGAAGTCCAGTGTACAGGGAAGATGTACATGTTA
TAGNTCTTCTCGAAGTCCCGGGCCAGCAGCTCCACGGGGTGGTCTCCTGCCTCCAGGCGCT
TCTCATTCTCATGGATCTTCTTACCCGGCAGCTTCTGCTTCTCAGTCAGAAGGTTGTTGTCC
TCATCCCTCTCATACAGGGTGACCAAGGACGTTCTTGAGCCAGTCCCGCATGCCGAGGGGGA
ATTGGTCAGTCAAGTCCAGGCCAAGGGGGGATGTATTGCAAGGCCCCGATGTAGTCCA
AGTGGAGCTTGTGGCCCTTCTTGGTCCCTCCAAGGTGCACTTTGTGGCAAGAAAGTGGCA
GGAAGAGTGAAGGTCTTGTGTCTATTGCTGCACACCTTCTCAAAGTCCGCAATGGGGGT
GGGCAGACCTGCCCGGGGGCGGCTCGA

16453.2.edit

TCGAGCGGCCCGCCGGGCAGGTCTGCCAGCCCCATTGGCGAGTTTGAGAAGGNGTGCA
GCAATGACAAACAGACCTTCGACTCTTCTGCACTTCTTGGCACAAAGTGCACCTTGA
GGGCACCAAGAAAGGGCCACAAGCTCCACCTGGACTACATCGGGCCTTGCAAAATACATCCC
CCCTTGCTGGACTCTGAGCTGACCGAATTCCCCCTGCCATCGGGGACTGGCTCAAGAAC
GTCTGGTCACCTGTATGAGAGGGATGAGGACAACAACCTTCTGACTGAGAAGCANAAG
CTCGGGTGAAAGANATCCATGACAAATGANAACCGCCTGNAGGCCANGAGACCACCCCGT
GGAGCTGCTGGCCCGGGACTTCGAGAACAATAACATGTACATCTTCCCTGTACACTGG
CAGTTCGGCCAGACCTCGGGCGGACCAAGCT

16454.1.edit

AGCOTGGNTGGGACGAGCCCGACAAAGCCATTGTATGTAGTTTANTTCAGCTGCAAAAN
AATACCNCCAGCATCCACCTTACTAACCAGCATATGCAGACA

16454.2.edit

TCGAGCGGTCCCGCCGGGCAGGTCTGGCCGATAGCACCGGGCATAATTTGGAATGGATGA
GGTCTGGCACCCCTGAGCAGCCAGCCAGCACTTGGTCTTACTTGAGCAATTTGGCTAGGA
GGATAGTATGCAGCACGGTTCTCAGCTCTGTGGATAGCTGCCATGAAGNAACCTGAAGGA
GGCGCTGGCTGGTANGGCTTGATTACAGGCTGGGAACAGCTCTACACTTGCATTCTCT
GCATATACTGGNTAGTGAGGCGAGCTGGCCGCTCTTCTTGGCTGAGCTAAAGCTACATA
CAATGGCTTTGNGGACCTCGGCCGCGACCAAGCTT

FIG. 15Z

16455.1.edit

TCGAGCGCGCGCGCGGCAAGGTCCATTTTCTCCCTGACGGTCCCCTTCTCTCCAATCTTGT
AGTTCACACEATTGTGATGACACCATCTAGATGAATCACATCTGAAATGACCACTTCCAAA
GCCTAAGCACTGGCACAACAGTTTAAAGCCTGATTGAGACATTCGTTCCCACTCATCTCCA
ACGGCATAATGGGAACTGTGTAGGGGTCAAAGCAGGATCATCCGTAGGTGGTTCAAG
CCTTCGTTGACAGAAAGTTGCCACGGTAACAACCTCTCCCGAACCTTATGCCTCTGCTGGT
CTTCAAGTGCTCCACTATGATGTTGTAGGTGGACCTCTGGTGAGGACCTCGGCCGCA
CCACGCT

16455.2.edit

AGCGTGGTTTGGCGCGGAGGTCTCACCANAGGTGCCACCTACAAATCATAGTGGAGGC
ACTGAAAGACCAGCAGAGGCATAAGGTTGCGGAAGAGGTTGTTACCGTGGGCAACTCTGT
CAACGAAGGCTTGAACCAACCTACGGATGACTCGTGCTTTGACCCCTACACAGNTTCCCAT
TATGCCGTTGGAGATGAGTGGGAACGAATGTCTGAATCAGGCTTTAAACTGTTGTGCCAGT
GCTTANGCTTTGGAAGTGGTCAATTCAGATGTGATTCACTANATGGTGTGATGACAATGG
TGNGAACTACAAGAATTGGAGACAAGTGGNACCGTCAGGGGANAAAATGGACCTGCCCGG
GCGGCNCGCTCGA

16456.1.edit

AGCGTGGTCCGCGCGGAGGTCTGCTTCTGCTCANGTGATTATCCTGAACCATCCAGGCC
AAATAGCGCGCGGCTATGCCCTGNAATTGGATTGCCACACGGCTCACATTGCATGCAAGTT
TGCTGAGCTGAAGGAAAACATTGATC

16456.2.edit

TCGAGCGCGCGCGCGGCAAGTCCAAATGAAACAAACAGTTCTGACACCGTTCTTCCACCA
CTGATTAAGAGTGGCGNGGCGGCTATTAGGATAAATTTCAATTAGCCTTCTGAGCTTTCT
GGGCAGACTTGGTACCTTCCAGCTCAGCAGGCTTCTGTCTCACTGCTTTGATGACACC
CAGCGCACTGTCTGTCTCATATCAGCAACAGCAAGCGGACCCAAAGGTGGATAGTCTGA
GAAGCTCTCAACACACATGGGCTTCCAGGAACCATATCAACAATGGGACGATCACCAG
ACTTCAAGAAATTAAGGGCAATCTTCCAGCTTTTACCAGAACGGCGATCAATCTTTTCTT
CAGCTCAGCAAACTTCCATGCAATGTGAGCCG

FIG. 15A

16459.1.edit

TCGAGCGGCGCGCGCGGAGGTCCAGAGGGCTGTGCTGAAGTTTGCTGCTGCCACTGGAG
CCACTCCAATTGCTGGCCGCTTCACTCCTGGAACCTTCACTAACCAGATCCAGGCAGCCTT
CCGGGAGCCACGGCTTCTTGTGGNTACTGACCCAGGGCTGACCACCAGCCTCTCACGGAG
GCATCTTATGTTAACCTAECTACCAATGCGCTGTGTAAACACAGATTCTCTCTGCGTATGT
GGACATTGCCATCCCATGCAACAACAAGGGAGCTCACTCAGNCGGGTTTGATGTGGTGA
TGCTGGCTCGGGAAGTTCTGCGCATGCGTGGCACCATTTCCCGTGAACACCCATGGGANGN
CATGCCTGATCTGACTTCTACAGAGATCCTGAAGAGATTGAAAAAGAAACAGGCTGN
TTGCTGANAAGCAAGTGACCAAGGANGAAAATTCANGGGTGAANGGACTGCTCCCGCT
CCTGAATTCAGTGTACTCAACCTGANGNTGCAGACTGGTCTTGAAGGNGNACANGGGCC
CTCTGGGCCTATTTAAGCANCTTCGGTCGCGAACACGNT

16459.2.edit

AGCGTGNGTCGGGCGGAGGTGCTGAATAGGCACAGAGGGCACCTGTACACCTTCAGACC
AGTCTGCAACCTCAGGCTGAGTAGCAGTGAATCAGGAGCGGGAGCAGTCCATTACCCCT
GAAAATCCTCCTTGGNCACTGCCCTCTCAGCAGCAGCCTGCTCTTCTTTTCAATCTCTTCA
GGATCTCTGTAGAAGTACAGATCAGGCAATGACCTCCCATGGGTGTTACGGGAAATGGTG
CCACGCATGCGCAGAACTTCCGAGCCAGCATCCACCACATCAAAACCCACTGAGTGAGCT
CCCTTGTGTTGATGGATGGGCAATGTCCACATAGCGCAGAGGAGAACTGTGTGTACAC
AGCGCAATGGTAGGTAGGTTAACATAGATGCTCCGGGACAAGCTGGTGGTCACCCCTG
GGGTCAAGTAACCAACAAGACCGCTGCTCCGGGAAGGCTGCTGGAATCTGTTAGTGAA
GGNTCCAGGAGTGAAGCGGCCAACAATTCGACTGGCTTCAGTGGCAAGCAGCAAACTTCA
GCACAAGCCCTCTGGACCTGCCCGCGCGCGCTCGA

16460.1.edit

TCGAGCGCGCGCGCGGAGGTCCATTTCTCCCTGACGGNCCACTTCTCTCCAATCTTGT
AGTTCACACCATTTGTATGGCACCATCTAGATGAATCACAATCTGAAATGACCCTTCCAAA
GCCTAAGCACTGGCACAAACAGTTTAAAGCCTGATTCAGACATTCGTTCCCACTCATCTCCA
ACGGCATAATGGGAAACTGTGTAGCGGTCAAAAGCAGGACTCATCCGTAGGTTGGTTCAAG
CCTTCCTTGACAGACTTCCCAAGGTATACAACTCCTCCCGCAACCTTATGCCCTCTGCTGG
GCTTTCAGNCCCTCCACTATGATGNTGTACGGGGGCACTCTGGNGANGACCTCGGCGCG
GACCACGCT

16460.2.edit

AGCGTGCTCGCGCGGAGGTGCTCACCAGAGGTCCACCTACAACATCATAGTGGAGGCA
CTGAAGAGCAGCAGAGGCATAAGGCTCGGGAAGAGGTTGTTACCGTGGGCAACTCTGTC
AACGAAGCCTTGAACCAACCTACGGATGACTCGTGCTTTGACCCCTACACAGTTTCCATT
ATGCCGTTGGAGATGACTGGGAACGAATGTCTGAATCAGGCTTTAACTGTTGTGCCACTG
CTTANGCTTTGGAAGTGGCTCAATTCAGATGTGATTCATCTAGATGGTGCCATGACAATGG
NGNGAACTACAAGATTGGAGAGAAGTCGNACCGNACGGACAAAATGGACCTGCCCGGG
CGCGCGCTCGA

FIG. 15BB

16461.1.edit

AGCGTGGTCGCGGCCGAGGTCCACATCGGCAGGGTCGGAGCCCTGGCCGCCATACTCGAA
CTGGAATCCATCGGTCACTGCTCTCGCGGAACAGACATGCCTCTTGCTTTGGGGTTCTTGC
TGATGTACCAAGTTCTTCTGGGCCACACTGGGCTGAGTGGGGTACACGCAGGTCTCACCAGT
CTCCATGTTGCAGAAAGACTTTGATGGCATCCAGGNTGCAACCTTGGTTGGGGTCAATCCAG
TACTCTCCACTCTTCCAGCCAGAGTGGCACATCTTGAGGTACGGCAGGTGCGGNCGGGGG
NTTTTGGGCTGCCCTCTGGNCTTCGGNTGTNCTCNATCTGCTGGCTCA

16461.2.edit

TCGAGCGGCCGCGCGGCAGGTCTCGCGGTGCGACTGGTGATGCTGGTCCTGTTGGTCCCC
CCGGCCCTCCTGGACCTCCTGGCCCCCTGGTCTCTCCAGCGCTGGTTTCGACTTCAGCTTC
CTGCCCCAGCCACCTCAAGAGAAAGGCTCAGATGGTGGCGGCTACTACCGGGCTGATGAT
GCCAATGTGGTTCTGTACCGTGACCTCGAGGTGGACACCACTCAAGAGCCTGAGCCAG
CAGATCGAGAACATCCGGAGCCAGAGGGCAGNCGCAAGAACCCCGCCCGCACCTGCCGT
GACCTCAAGATGTGCCACTCTGACTGGAAGAGTGGAGAGTACTGGATTGACCCCAACCAA
GCTGCAACCTGGATGCCATCAAAGTCTTCTGCAACATGGAGACTGGTGAGACCTGCGTGTA
CCCCACTCAGCCCACTGTGCCCCAAAAGAAGTGGTACATCAGCAAGAACCCCAAGGACAA
GAAGCATGTCTGGTTGGGCGAGAACATGACCGATGGATTCCAGTTCGAGTATGGCGGGCA
GGGCTCCGACCCCTGCCGATGGCGACCTTGGCGCGAACACGCT

16463.1.edit

ACCGTGGNNGCGCGGAGGTATAAATATCCAGNCEATACTCTCCCTCCACACCGCTGANAG
ATGAAGCTGTNCAAAGATCTCAGGCTGGANAAAACCAT

16463.2.edit

TCGAGCGGCCGCGCGGCAGGTCTTCAGACTTCGACTGTGTCACTGCCAGGCTTCAG
GGCTCCAACCTTCAGACGGCCTGTTGTGGGACAGTCTCTGTAATCGCGAAAGCAACCATG
GAAGACCTGGGGGAAAACACCAATGGTTTATCCACCCTCAGATCTTTGAACAACCTTCATCT
CTCAGCGTGGGAGGGAGGCTCTGGAATGGATATTTCTACCTCGCGCGGACCAAGCT

FIG. 15CC

16464.1.edit

CGAGCGGGCGACCGGGCAGGTNCAGACTCCAATCCANANAACCATCAAGCCAGATGTCAG
AAGCTACACCATCACAGGTTTACAACCAGGCCTGACTACAAGANCTACCTGCACACCTTG
AATGACAATGCTCGGAGCTCCCTGTGCTCATCGACGCTCCACTGCCATTGATGCACCAT
CCAACTGCGTTTCTGCGCCACCACACCCAAATTCCTTGGTATCATGGCAGCCGCCACG
TGCCAGGATTACCGGTACATCATCNAGTATGANAAGCCTGGGCTCCTCCAGAGAAGNG
GTCCCTCGGCCCCGCTGNTGTCCANAGGNTACTATTACTGNGCCNGCAACCGGCAACC
GATATCNATTTTGNCAATTGCCCTTCAACAATAATTA

16464.2.edit

AGCGTGGTTCCGCGCCGANGTCTGTGACAGTGGCACTGGTAGAAGTTCAGGAACCCCTG
AACTGTAAGGGTTCTTATCAGNGCCAAACAGGATGACATGAAATGATGTAAGTCAAGAGTG
TCCTGGAATGGGCGCCATGAGATGGTTGTCTGAGAGAGAGCTTCTTGNCTGTCTTTTTC
TTCCAATCAGGGGCTCGCTCTTCTGATTAATGTTCAAGGCAATGACATAAAATGATATTCG
GCTCCCGGNTCCAGGCCAGTAATAGTANCTCTGTGACACCAGGGCGGNGCCGAGGGGACC
ACTTCTCTGGGAGGAGACCCAGGCTTCTCATACTTGATGATGTAACCGGTAACTCTGGCAC
GTGGCGGCTGCCATGATACCAGCAAGGAATTGGGGTGTGGTGGCCAGGAAACCGCAGGTTG
GATGNGCATCAATGGCAGTGGAGGCGCTCGATGACCACAGGGGGAGCTCCGACATTGT
ATTCAGGTTG

16465.1.edit

AGCGTGGNCGCGCCGAGGTGCAGGCGCGGCTGTGCCACCTTCTGCTCTCTGCCCCAAGGAT
AAGGAGGGTNCCTGCCGCCAGGAGAACATTAAGTNTCCAGCTCGGCTCTGCGCG

16465.2.edit

TCGAGCGCGCGCGCGGGCAGGTTTTTGTGTAAGTGGTACTTTATTGNTGGGAAAG
GGAGAAGCTCTGCTCAGCCCAAGACGGAATACAGAGNCCGAAAAAGGGGAGGGCAGGT
GGGCTGGAACCAAGACCCAGGGCAGGCAGAAACTTTCTCTCTCACTGCTCAGCCTGCTG
GTGGCTGCAGCTCANAAAATGGGAGTGACACAGGACACCTTCCACAGCCAATTGGCGCGG
CATTTCTCTGCGCAGGACACTGCTGTGCACTGGCACTGGTCCCGACAGAAAGCCCGAGC
TGGGGAAGTTAAATGTTACCTGGGGCAGGAACCTCCTTATCATGNGCAGAGAGCAG
AAGGTGGCACAGCCCGCGCTGCACCTCGGCGGCAACCAAGCT

16466.2.edit

TCGAGCGCGCGCGCGGGCAGGTCCACCATAAGTCTGTATACAACCACGGATGAGCTGTCA
GGAGCAAGGTTGATTTCTTCAATGGTCCGGNCTTCTCCTTGGGGGNCACCGCACTCGAT
ATCCAGTGAGCTGAACAATGGCTGGCGTCACTGGCGCTCAGGCT

16467.2.edit

TCGAGCGGTTCCGCGCGCGCAGGTCCACCACACCCAATTCCTTGGTGTATCATGGCAGCCG
CCAGGTGCCAGGATTACCGGCTACATCATCAAGTATGAGAAGCCTGGCTCTCCTCCAGAG
AAGCGGTCCCTCGGCGCGCGCTGGTGTCAACAGGCTACTATTACTGGCCTGGAACCGGG
AACCAGATATACAATTTATGTCATTGNCCTGAAGATAATCANNAANAGCGANCCCTGA
TTGGAAGGA

FIG. 15DD

AGCGTGGTCGCGGCCGAGGTGTACAAGCT

TCGAGCGGNCGCCCGGGCAGGTCTGCCAACCAAGATTGGCCCCCGCGGCATCCACACA
GTCCGTGTGCGGGGAGGTAAACAAGAAATACCGTGCCCTGAGGTTGGACGTGGGGAAATTC
TCTGGGGCTCAGATGTTTACTCGTAAACAAAGGATCATCGATGTTGTCTACAATGCAT
CTAATAACGAGCTGTTTCGTACCAAGACCTGGTGAAGAATTGCCATCGTGCTCATCGACAG
CACACCGTACCGACAGTGGTACGAGTCCCACTATGCGCTGGCTCCCTGGCGCGCAAGAAGAGG
AGCCAAGCTGACTCTGAGGAAGAAGAGATTTTAAACAAAAACGATCTAANAAAAAAA
AAACAAT

AGCGTGGTCCGCCGCGAGGTGAAATGCTATTCAGCTTCTGGCACTTCTGGTACGCAACCC
AGTGTCTGGGCAACAATGATCTCTGAGCAACATGGTTTAAAGCGGACCCACACCGCCACG
ACGGCCACCCCCATAAGCATAGGCCAAGACCATACCCCGGAATCTAGGACACAAGAAGT
CTCTCTCAGCAACCATCTCATCGGGCCCATTCAGGACACTCTGATACATCATTTCACT
TCATCTGTGGCAGTGAAGAAGACCTTACATCTAGGGTTCCTGGAACCTTCTACCACT
GCCACTCTGACAGGACCTGCCCGGGCGCCCTCGA

TCGAGCGGCCGCGCCCGGGCAGGTCCTCTCACAGTGGCACTGGTAGAAGTTCCAGGAAACCTT
GAACCTGTAAAGGCTTTCTTCATCGAGTGGCAACAGAGATGCATGAATGATGTACTCAGAAAGT
GTCTGTGAATGGCGCCCATGACATGTTGTCTCAGAGAGAGCTTCTGTCTCATATCCGG
GGGTATGGTCTTGGCCATATGGCTTATGGGGGTGGCGGTGTGGGGCGGTGTGGTCCGCTAA
AACCATTGTCTCTAAAGATCATTTCTGGCCAACTACAGCTGGTCTGTACCAGAAAGTGCCAGG
AAGCTGAATACCATTTCCAGCTCGCGCGCGACCACTA

TCGAGCGCGCGCGCGGGCAGGTCTCCCTCTTGGCGCCACGGGCGACGGCATAGTGGGAC
 TCGTACCACTGTGCGGTACGGTGTGCTGTGATGAGCAGCATGCAATCTCTACCGAGGGTCT
 TGGTACAACACCGACTCGTTATTAGATGCAATTGTAGACAACATCGATGATCTCTGTTTACG
 AGTACAACACTCTGAGCGCCACAGGAGCAATCCCGACGTCCAACTCAGGGCAGCGGTATTT
 TTGTTACCTCCCCGCACACGGACTGTGTGGATGCGCGCGCGCGGCAAGCTCACTCTGAGGA
 AGAAGAGATTTTAAACA.AAAAAACGATCT.AAAAAATTGAGAACAAATATGATGAAGGA
 A.AAAGAATCCCAAAATCAGCAGTCTCTCTGGAGGACAGTCCAGCAGGGGC.AAGCTTCTTG
 CGTGCATCGGTTTCAAGCGCGGACAGTGTGACCGACAGATGGCTATGTGCTCAGAGGGCA
 A.AGAAGTGCAGTTCTATCTTAA.A.AAAATGAGCGGCCACAGTGTGNGCTTCA.ACTAATC
 CAAAGGGGAGCTT.CAGACAGTGC.AATCAGCA.A.AACATGATACTGNTGGCC.AAAATTA
 TTGGTGACGGGCTTCCACAT.AN.ANNGCGCTCGGCTTTGGGGCTTGGATTTGNC.ACAAGCT
 TTGGCAGCCTTTTCTTGGTTTGGCA.A.AACCTTTGNTG.AAGAN.AACCTNGGGCGGA
 CCCCTT.AACCGATTCAC.NCCNGCGCGCTTCTANGNCCNCTTG

FIG. 15EE

06_16471.edit

AGCGTGGTCGCGGCCGAGGTCTGCTGCTTCAGCGAAGGGTTTCTGGCATAACCAATGATA
 AGGCTGCCAAGAACTGTTCCAATACCAGCACCAGAACCCAGCCACTCCTACTGTTGCAGCAC
 CTGCACCAATAAATTTGGCAGCAGTATCAATGTCTCTGCTGATTGCACTGGTCTGAAACTC
 CCTTTGGATTAGCTGAGACACACCATTCTGGGCCCTGATTTTCTAAGATAGAACTCCAAC
 TCTTTGCCCTCTAGCACATAGCCATCTGCTCGGTACACTGTCCCGGCCCTTGAAGCGATGC
 ACGCAAGAAGCTTCCCTGCTGGAACCTGCTCTCCAGGAGACTGCTGATTTTGGCATTCCTT
 TTTCTTTTCATCATATTTCTTCTGAATTTTITAGATCGTTTTTGTTTAAATCTCTTCTTCC
 TCAGGAGTCAGCTTGGCCCCCGCCGATCCACACAGTCCGTTGTCGGGGAGGTAAACAAGA
 AATACCGTGGCCTGAGGTTGGACGTGGGGAATTTCTCTGGGGCTCAGAGTGGTGTACTCG
 TAAAACAAGGATCATCGATGGTGNCTACAATGCATCTAATAACGAGCTGGGTCCGACCCA
 AAGAACCTGGNGAANAATGGATCGNCTCATCGACAGGACACCGTACCCGACAGGGGNA
 CGANTCCCACTATGCGCTTGGCCCTGGGCCGAANAAGGAAAACTGCCCGGGCGGCCNT
 CGAAAGCCCAATTNTGGAAAAATCCATCACACTGGGNGGCCNGTCGAGCATGCATNTAN
 AGGGGCCCAATCCCCCTNANN

07_16472.edit

TCGAGCGCGCGCCCGGCCAGGTCCCCAACCAGGCTGCAACCTGGATGCCATCAAAGTCT
 TCTGCAACATGGAGACTGGTGAGACCTGCGTGTACCCCACTCAGCCCAGTGTGGCCCCAGA
 AGAACTGGTACATCAGCAAGAACCCCAAGGACAAGAGGCATGTCTGGTTCCGCCAGAGCA
 TGACCGATGGATTCCAGTTCGACTATGGCGGCCAGGGCTCCGACCCCTGCCGATGTGGACCT
 CGCCCGCGACCAACGCT

08_16472.edit

AGCGTGGTCGCGGCCGAGGTCCACATCGGCCAGGTGCGGAGCCCTGGCCGCCATACTCGAA
 CTGGAATCCA TCGGTCACTGCTCGCCGAACCAGACATGCTCTTCTCTTGGGTTCTTGC
 TGATGTACCACTTCTTCTGGGCCACACTGGGCTGACTGGGTACACCGAGGTCTCACCAGT
 CTCCATGTTCCAGAAGACTTTGATGGCATCCAGGTTGCAGCCCTGGTTGGGGACCTGCCCG
 GGCGCGCGCTCCA

09_16473.edit

TCGAGCGCGCGCCCGGCCAGGTCCACCACACCCAAATTCCTTGCTGGTATCATGGCAGCCGC
 CACCGTCCAGGAATACCGGCTACATCATCAAGTATGAGAAGCCTGGGTCTCTCCAGAGA
 AGTGGTCCCTCGGCCCGCCCTGGTGTACAGAGGCTACTATTACTGGCTTGAACCGGGA
 ACGGAATATACAAATTAATGCAATGCTGTAAGCAATAATCAGAAGAGCGAGCCCTGATTG
 GAAGGAAAAAGACAGACGAGCTTCCCAACTGGTAACCTTCCACACCCCAATCTTCATG
 GACAGAGATCTTGGATGTTCTTCCACAGTCAAAAAGACCCCTTTCGTACCCACCCTGG
 GTATGACACTGGAATGGTATTCAGCTTCTTGGCACTTCTGGTACGCAACCCAGTGTGGG
 CAACAATGATCTTTGAGGAACATGGNTTACGGCGGACCACACCGCCCAACAACGGCCACC
 CCCATAAGGCATAGGCCAAGACCATACCCCGCAATGTAGGACAAGAAGCTNTNTNCA
 ACACCATNTNATGGGCCCCATCCAGGACACTTCTGAGTACATCAATTAATGNCATCTGTGG
 CACTTGATGAAAAACCTTACAGTTCAAGGTTCTGCAACTTTTACCAGGCCTNTTACAGGAC
 TNGCCCGGACNCTTAAGCCNATTCACCCCTGGGGCTTCTANGGTCCCACTCGNNCACTG
 GNGAAAAATGGCTACTGTN

FIG. 15FF

11_16474.edit

AGCGTGGTGGCGGCGGAGGTCCACTAGAGGTCTGTGTGCCATTGCCAGGCAGAGTCTCTG
CGTTACAAACTCCTAGGAGGGCTTGCTGTGCGGAGGGCTGCTATGGTGTGCTGCGGTTCA
TCATGGAGAGTGGGGCCAAAGGCTGCGAGGTTGTGGTGTCTGNGAACTCCNAGGACANG
AGGGCTAAATTCCATGAAGTTTGTGGATGGCTGATGATCCACAAATCGGAGACCTGTTAA
CTACTACCGTCTNACCNCCTGCTGTNCNCCCCNTTCTGCTNAANACATNGGGNTMTNC
TTGNCNTCCCTGGGTNGAANATNNAAATNGCCTNCCNTTENTANCNTACTNGNTCCANA
NTTGGCCTTTAAANAATCCNCCTTGCTTMMNCAGTGTTCANNNTTTTNTCGTAAACCT
ATNANTTNATTANATMTNNNNNNCTCACCCCTCCTCATTNANCCNATANGCTNNNA
ANTCCTTNANNCCTCCCNCCNNTNCTCCTACTNANTNCTTCTNNCCCAATTACNNAGCT
CTTCTNTTAAATATAATGNNGCCNNGCTCTNCAATNTCTACNATNTGNNNAATNCCCCNCC
CCCNANCGNNTTTTGACCTNNNAACCTCCTTCTCTCTCCCTNCAAAATNCCNNANTTCC
NCNTTCCNNTTTTGGGNTNNTCCCATNCTTTCCANNCTTCACTANTNANCTNCAACT
TATTTTCTCTNCTATCCCTTNTCTTTACANNCCCCCTTCTACTCNCNNTTNCATTANAT
TTGAAACTNCCACNCTANTNCTCCTCTACNNTTTTATTTTNCGNTCCTCTACNTAAT
ANTTTAATNANTNTCN

12_16474.edit

TCGAGCGCGCGCGCGCGGAGGTCTGTGCCAAGGAGACCTGTTATGCTGTGGGACTGGCTG
GGCATGGCAGGCGGCTCTGCTTCCCACTCTCTGTTCTGAGATGGGGTGGTGGGCAGT
ATCTCATCTTTGGGTTCCACAAATGCTCAGCTGGTCAGGCAGGGGCTTCTTAGGGCCAACT
TACCAGTTGGGTCCCAAGGCGAGCATGAATCTTACCTTGATGCCAGCACACCTCTCTGAG
CAACAGCTGGCGCACAAAGCAGTGTCAACCTAGTAAGTTAACAGGGTCTCCGCTGTGGATC
ATCAGGCCATCCACAAACTTCAATGGAATTAGCCCTCTGTCTGGAGTTTCCAGACACCA
CAACCTCCAGCCCTTGGCGGAGCTCTCTATGATGAACCCAGCACACCAATAGCAGGCGCT
CGGCACAAGCAAGCCCTCTCAAGAAATTTGTAACCCANANACTCTGCTGGCAATGGCACAC
AAACCTCTAGTGGACCTCGGNCCTGACCTACCC

13_16475.edit

TCGACCGCGCGCGCGCGGAGGTCTGTGCCAAGGATACCTGGGAGTCTCTCTACTGCTACTC
CAGACTTGACATCATATGAATCATACTGGGAGAAATAGTTCTGAGGACCAATAGGGCATG
ATTACAGATTCCAGGGGGGCGAGGAGAACAGGGGACCTGGTGTCTCTGGAATACCAG
GGTCACCATTTCTCCACGAAATACAGGAGGCGCTGGAATCTCCCTTGGGGCTTGAGGTCC
TTGACCAATTAGGAGGGGAGTAGGAGGAGTTGGAGGCTGTGGGCAAACTGCACAAATTC
TCCAAATGGAATTTCTGGGTTGGGGAGTCTAAATCTTGATCCGTCACATATTATGTCATCG
CAGAGAACCGATCCTGAGTCACAGACACATATTTGGCATGGTCTGCTTCCAGACATCTC
TATCCGNCATAGGACTGACCAAGATGGGAACATCCTCCTTCAACAAGCTTNTGTTGTGCC
AAAAATAATAGTGGATGAAGCAGACCGAGAAAGTANCCAGCTCCCTTTTGCACAAAGC
NTCATCATGTCTAAATATCAGACATGAGACTTCTTGGGCAAAAAGGAGAAAAAGAAAA
AGCAGTTCAAAGTANCCNCAATCAAGTTGGTCTTGGCCNNTTCAGCACCCGGGCCCCGTT
ATAAAACACTNNGGGCGGACCCCTT

FIG. 15GG

14_16475.edit

AGCGTGGTCCCGGCCGAGGTGTTTTATGACGGGCCCGGTGCTGAAGGGCAGGGAACAAC
TGATGGTGCTACTTTGAACTGCTTTTCTTTCTCTTTTGCACAAAGAGTCTCATGTCTGA
TATTTAGACATGATGAGCTTTGTGCAAAAGGGGAGCTGGCTACTTCTGGCTCTGCTTCATC
CCACTATTATTTTGGCACAACAGGAAGCTGTTGAAGGAGGATGTTCCCATCTTGGTCAGTC
CTATGCGGATAGAGATGTCTGGAAGCCAGAACCATGCCAAATATGTGTCTGTGACTCAGG
ATCCGTTCTCTGCGATGACATAATATGTGACGATCAAGAATTAGACTGCCCAACCCAGAA
ATTCCATTTGGAGAATGTTGTGCACTTTGCCACAGCCTCCAAGTCTCTACTCGCCCTCC
TAATGGTCAAGGACCTCAAGGCCCAAGGGAGATCCAGGCCCTCCTGGTATTCCTGGGAG
AAATGGTGACCTGGTATTCCAGGACAACCAGGGTCCCTGGTTCTCCTGGCCCCCTGGA
ATCNGGNGAATCATGCCCTACTGGTCTCAAACATTTCTCCANATGATTCATATGATGTC
AAGTCTGGGATAGCNAGTANGGANGGACTCCAGGCTATTCTGGACCANACCTGCCGGGG
GGGCGTTGAAAGCCCCAATCTGCANANTNCTTACACTGGCGCCGTCGAGCTGCTTT
AAAAGGGCCATTCCNCTTTAGNGNGGGGANTACAATTACTNGCGCGCTTTANANCG
CGNGNCTGGGAAAT

15_16476.edit

AGCGTGGTCCCGGCCGAGGTCCACATCGGCAGGGTCCGAGCCCTGGCCGCCATACTCGAA
CTGGAATCCATCGGTCAATGCTCTCGCCGAACACAGACATGCCCTCTTGCTTGGGTTCTTGC
TGATGTACCAGTTCTTCTGGGCCACACTGGGCTGAGTGGGTACACGCAGGTCTCACCACT
CTCCATGTTGCAGAGACTTTGATGCCATCCAGGTTGAGGCTTGGTTGGGTCATCCAG
TACTCTCCACTCTTCCAGTCTGAGTCCACATCTTGAGGTCACGCCAGGTCCGGCGGGGT
TCTTGGGGCTGCCCTCTGGGCTCCGCAATTTCTCGATCTGCTGGCTCAGGCTCTTGAGGCTG
GTGTCCACCTCGAGGTCAAGGTCACGACACCAACACATTGGCATCATCAGCCCGGTAGTAGCGGC
CACCATCGTGAGCCTTCTCTTGANGTGGCTGGGCCAGGAAGTGAAGTCGAAACCAAGCGCT
GGGAGGACCAAGGGGACCAANAGGTCAGGAACGGGCCGGGGGGACCAACAGGACCCAG
CATCACAAGTGCGACCCGCCAGAACCTCCCGCCGNCCTCGAA

16_16476.edit

TCGAGCGNCCCGCGGGCAGGTCTCCCGGTCCCACTGGTGATGCTGGTCTGTTGGTCCCC
CCGGCCCTCTCTGACCTCTGCTCCCTGGTCTCTCCAGCGCTGGTTTGGACTTCAGCTTC
CTGCCCCAGCCACCTCAAGACAAGGCTCAGGATGGTGGCGGTACTACCGCGCTGATGAT
GCCAATGTGGTTCTGTACCGGTGACCTCGAGGTGACACCACTCAAGAGCCTGAGCCAG
CAGATCGACAACATCCGGAGCCGACAGGGCAGCGGCAAGAACCCCGCCCGACCTGCCGT
GACCTCAAGATGTGCCACTCTGACTGGAACAGTGGAGAGTACTGGATTGACCCCAACCAA
GGCTGCAACCTGATGCCATCAAACTCTTCTGCAACATGGAGACTGGTGAACCTGCGTGT
ACCCCACTCAGCCCACTGTGGCCAGAAAGAACTGGTACATCAGCAAGAACCCCAAGGACA
AGAGCCATGTCTGTTGGCCAGAGCAAGCAAGCAATGCAATTCAGTTCGAGTATGGCGCC
AGGGCTCCCACCTGCCGATGTGACCTCGCGCCCGGACCACTT

FIG. 15HH

17_16477.edit

TNGAGCGGCGGCGGCGGCGGAGGNTGNNACCGCTGGTCTGCTGGTCTCTGCGCAAGGCTG
GTGAAGATGGTCACCCCTGGAAAACCCGGACGACCTGGTGAGAGAGGAGTGTGTTGGACCAC
AGGGTGCTCGTGGTTTCCCTGGAACTCCTGGACTTCTGGCTTCAAAGGCATTAGGGGACA
CAATGGTCTGGATGGATTGAAGGGACAGCCCGGTGCTCCTGGTGTGAAGGGTGAACCTGG
TGCCCTCGGTGAAAATGGAACTCCAGGTCAAACAGGAGCCCGTGGGCTTCTGGTGAGAG
AGGACCGTGTGGTGGCCCTGGCCCAACCTCGGCGCGGACCAAGCTAAGCCCGAATTTCC
AGCACACTGGNGGCCGTTACTANTCGATCCGAGCTCGGTACCAAGCTTGGCGTAATCATG
GTCATAGCTGTTTCTGNGTGAAAATTGTTATCCGCTCACAAATTCACACANCATACGAAGC
CGGAAAGCATAAAGTGTAAGCCTTGGGGTGCTAATGAGTGAGCTAACTCNCAITAAATT
GCGTTGGGCTCACTGCCCCGCTTTTCCANNNGGGAACCNCTGGCNTNGCCNGCTTGCNTTAA
NTGAAATCCGCCNACCCCGGGGAAAAGNCGGTTTGCNGTATTGGGGCNCTTTTCCCTTT
CCTCGGNTTACTTGANTTANTGGGCTTTGNGCNTTCGGGTTGNGGCGANCNGGTTCAACN
TCACNCCAAAGGNGGNAANACGGTTTCCANAAATCCGGGGGNTANCCCAANGNAAAAAC
ATNMGNCNAANGGGCT

18_16477.edit

AGCGTGGTTNGCGGCGGAGGTCTGGCGGAGGGGACCAACACGTCTCTCTCACCAGGAA
GCCACGGGCTCTGTTTGACCTGGACTTCCATTTTACCAGGGGACAGGTTTACCCTT
CACACCGAGGACACCGGGCTGTCCCTTCAATCCATNCAGACCATTTGTGNCCTTAAATGCCCT
TTGAAGCGAGGAAGTCCAGGAGTTCCAGGGAAAACCGCGAGCACCTGTGGTCCAAACAC
TCCTCTCTCACCAGGTCTCGGGTTTTCAGGCTGACCATCTTACCAGCCTTGGCAGGA
GGACCGAGGACCGAGGTTACCAACCTGCGCGGGCGGCGGCTCGA

21_16479.edit

TCGACCGGCGGCGGCGGCGGAGGTCCAATTTCTCCCTGACGGTCCCACTTCTCTCCAATCTTGT
AGTTACACCAATTGTCAATGGCAACATCTAGATGAATCACAATCTGAAATGACCAGTTCCAAA
GCTTAAGCACTGGCACAAACAGTTTAAAGCTGATTCACACATTCGTTCCCACTCAATCTCCA
ACGGCATAATGGCAAACCTGTGTAGGGGTCAAAGCACGAGTCAATCCGTAGGTTGGTTCAAG
CCTTCCTTGACAGAGTTCCCGACGGTAACAACTGTTCGGGAACCTTAATGCCCTCTGCTGGT
TTTCACTGGCTCCACTATGATGTTGTACGTGGCACCTCTGGTGAGGACCTCGGCGGCGGACC
ACGCT

22_16479.edit

AGCGTGGTCCCGGCGGAGGTCTCACCAAGGTTCCACCTACAACATCATAGTGGAGGCA
CTGAAAGACCAAGCAGAGGCATAAGGTTCCGGAAAGAGTTGTTACCGTGGGCAACTCTGTC
AACGAAGGCTTGAACCAACCTACCGATGACTCGTCTTTGACCCCTACACAGTTTCCATT
ATGCCGTTGGAGATGACTCGCAACGAATGCTGAATCAGGCTTTAACTGTTGTGCCAGTG
CTTAGGCTTTGGAAGTGGTCAATTCAGATGTGATTCATCTAGATGGTGCCATGACAAATGG
TGTGAACATACAAGATTGGACAGAAAGTGGACCGTCAGGAGCAAAATGGACCTGCCCGG
CCGGCCGCTCGA

FIG. 15II

24_16480.edit

TCGAGCGNCGCCCGGGCAGGTCCAGTAGTGCCCTCGGGACTGGGTTACCCCCAGGTCTG
CGGCAGTTGTACAGCGCCAGCCCCGCTGGCCTCCAAAGCATGTGCAGGAGCAAAATGGCA
CCGAGATATTCCTTCTGCCACTGTTCTCTACGTGGTATGTCTTCCCATCATCGTAACACGT
TGCCTCATGAGGGTCACACTTGAATTCCTTTTCGGTTCCCAAGACATGTGCAGCTCATTT
GGCTGGCTCTATAGTTTGGGGAAAGTTGTGAACTGTGCCACTGACCTTTACTTCTCTCT
TCTTACTGGAGCTTTCGTACCTTCCACTTCTGCTGTTGGTAAATGGTGGATCTTCTATCA
ATTTCAITGACAGTACCCACTTCTCCC.AAACATCCAGGAAAATAGTGATTTCAAGAGCGATT
AGGAGAACCAAAATATGGGGCAGAAATAAGGGGCTTTTCCACAGGTTTTCTTTGGAGGA
AGATTTCACTGGTGACTTTAAAGAAATACCTAACAGTGTCTTCATCCCCATAGCAAAAGAA
GAAACNGTAAATGATGGAANGCTTCTGGAGATGCCNNCATTTAAGGGACNCCCAGAACTT
CACCATCTACAGGACCTACTTCACTTTACANNAAGNCACATANTCTGACTCANAAAGGAC
CCAAGTAGCNCCATGGNCAGCACTTTNAGCCTTTCCCTGGGGGAAAANNTTACNTTCTTAA
ANCTTNGCCNNGACCCCTTAAGNCCAAATNTGGAAAANTTCNTNCCNCTGGGGGGC
NGTTCNACATGCNTTTAAGGGCCCAATTNCCCNCT

25_16481.edit

TCGAGCGGCGCCCGGGCAGGTGTCTGAGTCCAGCACGGGAGGCGTGGTCTTGTAGTTGT
TCTCGGGGTGCCCCATTGCTCTCCACTCCACGGCGATGTGCTGGGATAGAAGCCTTTGAC
CAGGCAGGTACGGCTGACCTGGTCTTGTCTATCTCTCCCGGATGGGGCCAGGGTGTAC
ACCTGTGTTCTCGGGGTGCCCC.TTGCCTTTGGAGATGGTTTTCTCGATGGGGGCTGGGA
GGGCTTTGTTGGAGACCTTGCCTTGTACTCTTGCCTTACAGGCAGTCTGTGTCAGGAC
GGTGAGGACCGTGAACACAGGTACGTGCTTGTACTGCTCTCTCCCGGGCTTTGTCTTG
GCATTATGCACCTCCACGGGCTCCAGTACAGTTGAACCTGACCTCAGGCTCTTCTGTGG
TCAGTCCACCAACCAAGCATGTAACTCAGACCTCGGGCCGACCAAGCT

26_16481.edit

AGCGTGGTGGGGCCGAGGTCTGAGGTACATCCGTGGTGGGACGTGAGCCACGAAGA
CCCTGAGGTCAAGTTCAACTCTACGTGGACGGCGTGGAGGTGCAATAAGCCAAGACAAA
GCCGGGGAGGACCACTACAACACCACTACCTGTGCTCAGCGTCTCACCCTCTGCA
CCAGGACTGGCTCAATGGCAACCACTACAAGTCCAAAGTCTCCAACAAGCCCTCCCAAC
CCCCATCGAGAAAACCACTCTCAAGGCAAGGGCAAGCCCGGAGAACCAACAGGTGTACA
CCCTGCCCCCATCCCGGCAAGCAATGACCAAGAACAGGTCAAGCTGACCTGCTGGTCA
AAGCTTCTATCCCAAGCAATCGCGGTGAGTGGGAGCAATGGGCAGCGGAGAAACA
ACTACAAGACCACGGCTCCCTGCTGCACTCGGACACCTGCCCCGGCGGGCTCGA

27_16482.edit

TCGAGCGGCGCCCGGGCAGGTGAAATGGCTCTCTGCTGACACCCCGGTGCTGGTGGTGG
GTACAGAGCTCCGATGGGTGAAGCAATGACATAGAGACTGTCCCTGTCCAGGGTGTAGG
GGCCCAGCTCAGTGATCCCTGGGTGAGTGGCTCAGCTTCCAGTACAGCGGCTCTCTGTC
CAGTCCAGGCTTTTGGGTGAGGACCATGGGTGACAGCATCCACTCTGGTGGCTGC
CCCATCCTTCTCAGGCTGAGCAAGGTGAGTCTGCAACCAGAGTACAGACAGCTGACACT
GGTGTCTTCAACAAGGCAATAAGCAGACCTGAAGGACACCTCGGGCGGACCAAGCT

FIG. 15JJ

23_16482.edit

AGCGTGGTGGCGGCCGAGGTGTCTTCAGGGTCTGCTTATGCCCTTGTTCAGGAACACCAG
TGTCAGCTCTCTGTACTCTGTTGCAGACTGACCTTGCTCAGGCCTGAGAAGGATGGGGCA
GCCACCAGAGTGGATGCTGTCTGCACCCA TCGTCTGACCCCAAAAGCCCTGGACTGGACA
GAGACGGCTGTACTGGAAGCTGAGCCAGCTGACCCACGGCATCACTGAGCTGGGCCCT
ACACCTGGACAGGGACAGTCTCTATGTC.AATGTTTCACCCATCGGAGCTCTGTACCCAC
CACCAGCACCGGGGTGGTCACCGAGGAGCCAATCAACCTGCCCGGGCGGCGCTCGA

29_16483.edit

AGCGTGGTGGCGGCCGAGGTCTCTCAGAGTGGCACTGGTAGAAGTTCAGGAACCCCTGA
ACTGTAAGGGTCTTTCATCAGTGCCAAACAGGATGACATGA.AATGATGTACTCAGAAAGTGTC
CTGGAATGGGGCCCATGAGATGGTTGTCTGAGAGAGAGCTTCTTGTCTACATTGGCGGG
TATGGTCTTGGCCTATGCCCTATGGCGGTGCGCGTTGTGGCGGTGTGGTCCGCCTAAAC
CATGTTCTCAAAGATCA.TTTGTTGCCCAACACTGGGTGTCTGACCAGAAAGTGGCAGGAAG
CTGAATACCATTTCCAGTGTCA.TACCCAGGGTGGGTGACGAAAGGGGTCTTTTGAAGTGTG
GAAGGAACATCCAAGATCTCTGGTCCA.TGAAGATTGGGGTGTGGAAAGGGTTACCAGTTGG
GGAAGCTCGTCTGTCTTTTCTCTCCAATCAGGGGCTCGCTCTTCTGATTATTCTTCAAGGC
AATGACATAAAATTGTATA.TTCGGTCCCGGTTCCAGGCCAGTAAATAGTACCTCTGTGACAC
CAGGGCGGGCGGAGGGACCCCTCTNTTGGAAAGAGACCAGCTTCTCATACTTGTATGATGA
GNCGGTAAATCCTGGCACCTGONGCTTGCATGATNCCACCAAGGAATNGGNGGGGNG
GACCTGCCCGGGCGGCTTCN.AAAGCCCAATTCACACACTTGGNGCGGTACTATGGATC
CCTCNGTCCAACCTTGGNGCAATATGGCATAACTTT

31_16484.edit

TGGAGCGCGCGCGCGGCGAGGTCTCTGACCTTTTCAGCAAGTGGGAAGGTGTAAATCCGTCT
CCACAGACAAGCGCCAGCACTCGTTTGTACCGCTTGATGATAGAATGGGGTACTGATGCAA
CAGTTGGGTAGCCAAATCTGCCACACAGCACTGCCAACAATGGGACACCCCTCCAGGAAGC
GAGAAATGACAGTTTCTCTGTGATATCAAGCACTTCAGGGTTGTAGATGCTGCCATTGTC
GAACACCTGCTGGA.TGACCAGCCCAAGGACAAAGGGGAGATGTTGAGCATGTTACGACG
CGTGGCTTCGCTCGCTGCCAATTTCTCTCAGCTCTTGTATCAGACCTCGGCGCCGACACCGCT

33_16485.edit

AGCGTGGTGGCGGCCGAGGTCTGTCTTACAGTCTCAGGACTCTACTCCCTCAGCAGCGTG
GTGACCGTGCCCTCCAGCAACTTCCGCACCCAGACCTACACCTGCAACGTAGATCACAAGC
CCAGCAACACCAAGGTGGACAAAGAGACTTGAGCCCAATCTTGTGACAAACTCAGACAT
GCCCACCGTCCCAGCACCTGA.ACTCTTCCGGGACCGTCACTCTTCTTCCCCCGCAT
CCCCCTTCCAAACCTGCCCGGGCGGCGCTCG

FIG. 15KK

38_16487.edit

CGAGCGGCGCGCGCGGCGAGGTTTGG.AAGGGGGATGCGGGGGAAGAGGAAGACTGACGGT
CCCCCAGGAAGTTCAAGGTGCTGGGCACGGTGGGCATGTGTGAGTTTTGTACAAGATTTGG
GCTCAACTCTCTTGTCCACCTTGGTGTGCTGGGCTTGTGATCTACGTTGCAGGTGTAGGTC
TGGGTGCCGAAGTTGCTGGAGGGC.ACGGTCACCACGCTGCTGAGGGAGTAGAGTCTCTGAG
GACTGTAGGACAGACCTCGCCCGGACACGCT

39_16488.edit

NGGNNGGTCCGGNCNGNCAGGACCACTCTCTTCGAAATA

41_16489.edit

AGCGTGGTGGCGGCGGAGGTCTCACTTGCCCTCTGCAAAGCACCGATAGCTGGGCTCTGG
AAGCGCAGATCTGTTTTAAAGTCCTGAGCAAATTTCTCCACCAGACGCTGGAAAGGAAGTT
TGGGAATCAGAAAGTTCACTGGACTTCTGATAACGTCTAATTTACGGAGCGCCACAGTACC
AGGACCTGCCCGGGCGGCGGCTCGA

42_16489.edit

TGGAGCGCGCGCGCGCGGCAAGTCTCTGCTACTGNGCGGCTCCGTGAAATTAGACGTTATCA
GAAGTCCACTGAACCTTCTGATTGGCAAACCTTCCCTTCAGCGTCTGCTGCGAGAAATTGCT
CAGGACTTTAAAACAGATCTGGGCTTCCAGAGCGCAGCTATCGGTCTTTGCAGGAGGCA
AGTGAGGACCTCGGCGCGGACACGCT

45_16491.edit

TGGAGCGCGCGCGCGGCGGCAAGTCCACATCGGCAGGCTCGGAGCCCTGCGCGCCATACTCG
AACTGGAAATCCATCGGTCACTCTCTCGCGGAACCAAGACATGCTCTTGTCTTGGGTTCT
TGCTGATGTACCACTTCTTCTGGGCGACACTGGGCTGAGTGGGTACACGCAGGTCTCACC
AGTCTCCATGTTCCAGAAGACTTTGATGGCATCCAGGTTGCAGCCTTGGTTGGGTTCAATC
CAGTACTCTCCACTCTTCCAGTCAGAGTGGCACATCTTGAGGTCACGGCAGGTGCGGGCGG
GTTCTTGACCTCGGCGCGGACACGCT

FIG. 15LL

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GTGGGNTTGAACCCNTTTNANCTCCGCTTGGTACCGAGCTCGGATCCACTAGTAACGGCCG
CCAGTGTGCTGGAAATTCGGCTTAGCGTGGTCGGGGCCGAGGTCAAGAACCCCGCCCGCAC
CTGCCGTGACCTCAAGATGTGCCACTCTGACTGGAGAGTGGAGACTACTGGATTGACCC
CAACCAAGGCTGCAACCTCGATGCCATCAAGTCTTCTGCAACATGGAGACTGGTGAGAC
CTGCGGTGACCCCACTCAGCCCACTGTGGCCAGAGAAGAACTGGTACATCAGCAAGAACCC
CAAGGACAAACAGGCATGTCTGGTTCGGCGAGAGCATGACCGATGGATTCCAGTTCAGTA
TGGCGGCCAGGGCTCCGACCTGCCGATGTGGACCTGCCCGGCGCGCCCTCGA

47_16492.edit

AGCGTGGTCGGCGCCGAGGTCTGGGATGCTCCTGCTGTACAGTGAGATATTACAGGATC
ACTTACGGAGAAACAGGAGGAAATAGCCCTGTCCAGGAGTTCAGTGTGCTGGGAGCAAG
TCTACAGCTACCATCAGCGCCCTTAAACCTGGAGTTGATTATACCATCACTGTGTATGCTG
TCACTGGCCGTGGAGACAGCCCGCAAGCAGCAAGCCAAATTTCCATTAAATACCGAACAG
AAATTGACAAACCATCCCAGATGCCAAGTGACCGATGTTACAGGACAACAGCATTAGTGTCA
AGTGGCTGCCCTCAAGTTCCCTGTTACTGGTTACAGAGTAACCACTCCCAAAATGG
ACCAGGACCACACAAA.AACT.AAACTGCCAGGTCCAGATCAACAGAAATGACTATTGAAG
GCTTGCAGCCCAACAGTGGAGTATGTGTTAAAGTGTCTATGCTCAGAAATCC.AAGCGGAGAG
AAGTCAGCCTCTGTTTCACTGNAAGTAACCAACATTGATCGCCTAAAGGACTGGCATT
ACTGATNGGATGCCGATTGCA.TCAAAATTCNTTGGGAAAACCCACAGGGGCAAGTTTNC
ANGTCNAGGNGGACCTACTGAGCCCTGAGGATGGAATCCTTGACTNTTCTTNNCTGAT
GGGGAAAAAAACCTTNA.AAACTTGAACGACCTGCCCGGGCGCGCTNCA.AAAACCCAAAT
CCACCCCTTGGCGCGCTTCTATGGGNCACACTCGGACCAAACTTGGGCTAAN

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TCGAGCGCGCGCGCGCGAGGTCTTGCAGCTCTCCAGTGTCTTCTCACCATCAGGTGCA
GGCAATAGCTCATEGATTCCATGCTCAGGGCTCGAGTAGGTCAACCTGTACCTGGA.AACTT
GCCCCGTGGGGCTTTCCCAAGCAATTTGATGGAATCGGCATCCACATCAGTGAATGCCAG
TCCTTTAGCGCGATCAATGTTGTTACTCCAGTCTGAAACAGAGGCTGACTCTCTCCGCTT
GGAATCTGAGCATACACACTAACCACATCTCCACTGTGGGCTGCAAGCCTTCAATAGTCA
TTCTGTTTGAATCGGACCTGCCACTTTTACTTTTGGTTGCTCCTGGTCCATTTTTCGAGTG
GTGGTACTCTGTAAACAGTAACACGGGAACCTGAAGGCCAGGACTTGACACTAAATGCTGT
TGTCTGAACATCGGTCACCTTCAATCTGGCATGCTTTGTCAATTTCTGTTCCGTAATTAATG
GAAATTCGCTTGTGCTTGGGGGGCTTGTCTCCACGGCCAGTGACACCATACACAGTGATG
GTATAATCAACTCCAGGTTTAAAGCCGCTGATGGTAGCTGAAACTTTGCTCCAGGCCACAAGT
GAACCTCTGACAGGCTATTTCTCTGCTTCTCCGTAAAGTGAATCTGTAAATCTC.ACTGGG
ACAGGAGGANGCATTC.AAACTTCCGGCGNCAACCCCTAAGCGGAAATNTGCCAATATNC
ATCACTGCGCGCGCTCGANCAATTCAT.AAAAGCCCAATNCCCTATAGGGAGTNT
ANTACAATTNG

FIG. 15MM

49_16493.edit

TCGAGCGGCCCGCCGGCCAGGTCACTTTTGGTTTTTGGTCATGTTGGTTGGTCAAAGATA
AAAACAAAGTTTGAGAGATGAATGCAAAGGAAAAAATATTTTCCAAAGTCCATGTGAAA
TTGTCTCCCAATTTTTGGCTTTTGAGGGGGTTCAAGTTTGGTTGCTTGTCTGTTCCGGGT
GGGGGAAAGTTGGTTGGTGGGAGGGAGCCAGGTTGGGATGGAGGGAGTTTACAGGAA
GCAGACAGGGCCCAACGTCG

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AGCGTGGTCGGGGCCGAGGTCTCACCAGAGGTGCCACCTACAACATCATAGTGGAGGCA
CTGAAAGACCAGCAGAGGCATAAGGTTGGGGAAGAGGTTGTTACCGTGGGCAACTCTGTC
AAGCAAGGCTTGAACCAACCTACGGATGACTCGTGCTTTGACCCCTACACAGTTTCCATT
ATGCCGTTGGAGATGAGTGGGAACGAATGTCTGAATCAGGCTTTAACTGTTGTGCCAGTG
CTTAGGCTTTGGAAGTGGTCAATTCAGATGTGATTTCATCTAGATGGTGGCATGACAAATGGT
GTGAACACAAAGATTGGAGAGAAGTGGGACCCTCAGGGAGAAAAATGGACCTGCCCGGGC
GCCCCCTCGA

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TCGAGCGGCCCGCCGGCCAGGTCCAATTTCTCCGTGACGGTCCCAGTTCTCTCCAATCTTGT
AGTTCACACCAATGTCATGCCACCATCTACATGAATCACATCTGAAATGACCAGTTCCAAA
GCCTAAGCACTGGCACAACAGTTTAAAGCCTGATTCAGACATTCGTTCCCACTCATCTCCA
ACGGCATAATGGGAAACTGTGTACGGGTCAAAGCAGGATCATCCGTAGGTTGTTCAAG
CCTTCGTTGACAGATTGGCCACCGTAACAACCTCTCCCGAAGCTTATGCTCTGCTGGTG
TTTCAGTCCCTCCACTATGATGTTGTAGCTGCCACCTCTGCTGAGGAACCTCGGCCCGGACC
ACGCT

59_16498.edit

TCGAGCGGCCCGCCGGCCAGGTCCACCATAAGTCTCTGATACAACCAGGATGAGCTGTCA
GGAGCAAGGTTGATTTCTTTCATTTGCTCCGCTCTTCTCCTTGGGGGTCACCCGCACTCGATA
TCCAGTGACCTGAACATTTGCTGCTGTCCACTGGGCGCTCAGGCTTGTGGGTGTGACCTGA
GTGAACCTCAGGTCAAGTTGGTCCAGCAATAGTGGTTACTCCAGTCTGAACCAGAGGCTGA
CTCTCTCCGCTTGGATTTCTGAGCATAGACACTAACCACATACTCCACTGTGGGCTGCAAGC
CTTCAATAGTCAATTTCTGTTGATCTGCACTTGCAGTTTACTTTTGTGGTCTGCTCCAT
TTTTGGGAGTGCTGCTTACTCTGTAACCACTAACAGGGAACTTGAAGGCAGCCACTTGAC
ACTAATGCTGTTGTCTCAACATCCGTCACCTTGCACTGGGATGGTTGNCAATTTCTGTTT
GGTAATTAATGGAATTTGCTTCTCTTGGGGGCTGTCTCCACGGCCAGTGACAGCATA
CACACNGATGGNATNATCAACTCCAAGTTTAAGGCCCTGATGGTAACTTTAACTTGTCTCC
CAGCCAGNGAATCTCCGGACAGGATAATTTCTTCTGTTTCCGAAAGNGANCCTGGAAATNN
TCTCCTTGGANCAGAAGGANCTCCAAAACCTTGGGCCGGAACCCCTT

FIG. 15.NV

60_16473.edit

AGCGTGGTCGGGGCCGAGGTCTGTGACAGTGGCACTGGTAGAAGTCCAGGAACCCCTGA
ACTGTAAGGGTTCTTCATCAGTGGCAACAGGATGACATGAAATGATGTACTCAGAAAGTGT
CTGGAATGGGGCCCATGAGATGGTTGTCTGAGAGAGAGCTTCTTGTCTACATTGGCGGG
TATGGTCTTGGCCTATGCCTTATGGGGCTGGGGCTTGTGGGGGTGTGGTCCGCCTAAAAC
CATGTTCTCAAAGATCATTTGTTGCCCAACACTGGGTGCTGACCAGAAAGTCCAGGAAG
CTGAATACCAATTTCCAGTGTATACCCAGGGTGGGTGACGAAAGGGGTCTTTTGAAGTGT
GAAGGAACATCCAAGATCTCTGGTCCATGAAGATTGGGGTGTGGAAGGGTTACCACTGG
GGAAGCTCGTCTGTCTTTTCTTCCAATCAAGGGCTCGCTCTTCTGATTATTCTTCAGGGC
AATGACATAAATGTATATTGGTTCCCGGTTCCAGGCCAGTAATAGTAGCCTCTTGTGAC
ACCAGGCGGGGGCCANGGACCACTTCTCTGGGANGAGACCCAGCTTCTCATACTTGATGAT
GTAACCCGGTAACTCTGCACGTGGCGGCTGNCATGATACCANCAAGGAATTGGGTGNGGN
GGACCTGCCCCGGCGGCCCTCNA

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AGCGTGGTCGGGGCCGAGGTCTGGGATGCTCCTGCTGTACAGTGAGATATTACAGGATC
ACTTACGGAGAAACAGGAGGAAATAGCCCTGTCCAGGAGTTCACTGTGCCTGGGAGCAAG
TCTACAGTACCATCAGCGGCCCTTAAACCTGGAGTTGATTATACCATCACTGTGTATGCTG
TCACTGGCCGTGGAGACAGCCCGCCAGCAGCAAGCCAAATTCATTAATTACCGAACAG
AAATTGACAAACCATCCAGATGCCAAGTGACCGATGTTCAAGGACAACAGCAATTAGTGTCA
AGTGGCTGCCCTCAAGTTCGCCCTGTACTGCTTACAGAGTAACCACTCCCAAAATGG
ACCAAGGACCAACAAAACCTAAACCTCCAGGTCCAGATCAAAACAGAAATGACTATTGAAG
GCTTGCAGCCACAGTGGAGTATGCTGTTAGTGTCTATGCTCAGAAATCCAAAGCGGAGAGA
GTGAGCCTCTGTTTCACTGCTGCTAAGCACTATTCTGCAACCACTGACCTGAAGTTTAC
TCAGGTACACCCACAAAGCTTGAGCGGCCAGTGGACACCCCAATGTTCACTCACTGGAT
ATCGAGTGGCGGGTGACCCCAAGGAGAAAGACCCGACCCATGAAAGAAATCAACCTTGT
CCTGACACCTCATCCCGCGGTGTATGAGCACTTATGGGGGACTGCCCGCCNGGCCGNTC
GAAANGAATTNTGAAATTCCTTCNCACCTGGGNGCGGNTTGGAGCTTCTNTANANGGC
CCAATTGNCCTNTAGNCGGTCTN

61_16499.edit

ACCGTGGTCGGGGCCGAGCTCNAAGGA

62_16483.edit

TCGAGCGCGCGCGCGCGCGAGGTCCACCAACCCAAATTCCTTGGTGGTATCATGGCAGCCGC
CACGTGCCAGGAATTACCGCTACATCATCAAGTATGAGAAGCCTGGGTCTCCTCCAGAGA
AGTGGTCTCTCGCGCGCGCGCTGGTGTACAGAGGCTACTTACTGGCTGGAAACCGGGA
ACCGAATATACAAATTTATGTAATGGCTGAAAGATAATCAGAAAGCGGAGCCCTGATTG
GAAGGAAAAACACAGAGAGCTTCCCAACTGGTAACCTTCCACACCCCAATCTTCAATG
GACCAGAGATCTTGGATGTTCTTCCACAGTTCAAAAGACCCCTTTCGTACCCACCTGG
GTATGACACTGGAATGGTATTACGCTTCTGGCACTTCTGGTCAACACCCAGTGTGGG
CAACAAATGATCTTTGACGAACATGGTTTAGGGGGACCAACCGCCCAACACCGGGCACC
CCCATAAAGGNATAGGCCAAGACCATACCGCGCGCAATGTAGGACAAGAACTCTNTCTCA
ACAACCATCTCATGGGCCCCATTCCAGGACACTTCTGAGTACATCATTTTCAATGTCATCCTG
GTGGGCACTTGATGAANAACCTTACAGTTACGGGTCTCTGGAACCTCTACCAAGGCCACT
TCTGACAGGANTTGGCGGNGACCACT

FIG. 1500

63_16500.edit

AGCGTGGTCGGCGCCGAGGTCCATTTTCTCCCTGACGGTCCCACCTTCTCTCCAATCTTG TAG
TTCACACCAATGTCATGGCACCATCTAGATGAATCACATCTGAAATGACCACTTCCAAAGC
CTAAGCACTGGCACAACAGTTTAAAGCCTGATTACAGACATTTCGTTCCCACTCATCTCCAAAC
GGCATAATGGGAAACTGTGTAGGGGTCAAAGCAGGATCATCCGTAGGTTGGTTCAAGCC
TTCGTTGACAGAGTTGCCACGGTAACAACCTCTTCCCGAACCTTATGCCCTCTGCTGGTCTT
TCAGTGCCCTCCACTATGATGTTGTAGGTGGCACCTCTGGTGAGGACCTGCCCGGGCGGCC
GCTCGA

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AGCGTGGTCGGCGCCGAGGTGTGCCCCAGACCAGGAATTCGGCTTCGACGTTGGCCCTGTC
TGCTTCCTGTAAACTCCCTCCATCCCAACCTGGCTCCCTCCACCCAACCAACTTTCCCCC
AACCCGGAAACAGACAAGCAACCCAACTGAACCCCTCAAAGCC.AAAAAAATGGGAG
ACAATTTACATGGACTTTGAAAAATA.TTTTTCTTTGCAATCTCTCAAACCTTAGTT
TTTATCTTTGACCAACCGAACA.TGACCA.AAAACCAAAAGTGACCTGCCCGGGCGGCGCTC
GA

64_16500.edit

TGAGCGGGCGCGCGCCGAGGTCTCACCAGAGGTGCCACCTACAACATCATAGTGGAGG
CACTGAAAGACCAGCAGAGGCATAACGTTCCGGAAAGAGGTTGTTACCGTGGGCAACTCTG
TCAACGAAGGCTTGAACCAACCTACGGATGACTCGTGCTTTGACCCCTACACAGTTTCCA
TTATGCCGTTGGAGATGAGTGGCAACGAATGCTGAATCAGGCTTAAACTGTTGTGCCAG
TGCTTAGGCTTTGGAAGTGGTCA.TTTCAGATGTGATTCATCTAGATCGTCCCATGACAAATG
GTGTCAACTACAAGATTGGAGAGAAGTGGGACCGTCAGCCAGAAATGGACCTCGGCCG
CGACCACCT

FIG. 15PP

16501.edit

TCGAGCGGCGCGCGGGCAGGTACCGGGGTGGTCAGCGAGGAGCCATTCACACTGAACTT
CACCATCAACAACTGCGGTATGAGGAGAACATGCAGCACCTGGCTCCAGGAAGTTCAA
CACCAAGGAGAGGGTCTTCAGGGCTGCTCAGGTCCCTGTTCAAGAGCACAGTGTGGC
CCTCTGACTCTGGCTGCAGACTGACTTGGTCAGACCTGAGAAACATGGGGCAGCCACTG
GAGTGGACGCCATCTGCACCTCCGCTTGATCCCACTGGTCTGGACTGGACANANAGCG
GCTATACTGGGAGCTGANCCNAACCTTTGGCGGNGACNCCNTT

16501.2.edit

GAGGACTGGCTCAGCTCCCAGTATAGCCGCTCTCTGTCCAGTCCAGGACCAGTGGGATCAA
GGCGGAGGGTGAGATGGCGTCCACTCCAGTGGCTGCCCCATGTTTCTCAAGTCTGAGCAA
AGNCAGTCTGCAGCCAGGTACAGAGGGCCAACTGCTGCTTGAACAGGGACCTGAG
CAGGCCCTGAAGGACCTCTCCGTGGTGTGAACCTTCTGGAGCCAGGGTGTGATGTTT
TCCTATACCCGAGGTTGTTGATGGTGAACCTCAGTGTGAATGGCTCCTCGCTGACCACCC

16502.1.edit

AGCGTGGTGGCGGCGGAGGTCCACCACACCCAAATTCCTTGCTGGTATCATGGCAGCGGCCA
CGTGCCAGGATTACCGGTACATCATCAAGTATGAGAAAGCCTGGGTCTCCTCCCAGAGAA
GTGGTCCCTCGGCGCGCGCTGGTGTACAGAGGCTACTATTACTGGCCTGGAACCGGGAA
CCGAATATACAAATTTATGTCAATGGCTCAAGAATAATCAGAAGAGCGAGCCCTGATTGG
AAGGAAAAAGACACAGGAGCTTCCCAACTGGTAACCTTCCACACCCCAATCTTCATGG
ACCANANACTTGGATNGTCTTTCACNGGTTNAAAAAACCTTTTGGCCCCCACCTTG
GGGATTAACCTTGGGAAAGCGGGAATTNACNTTCC

16502.2.edit

TCGAGCGGCGCGCGGGCAGGTCTGTACAGTGGCACTGGTAGAAGTCCAGGAACCTT
GAACTGTAAGGCTTCTTCATCAGTCCCACAGGATGACATGAAATGATGTACTCAGAAGT
GTCTTGGAAATGGGCGCCATGAGATGGTGTGTGAGAGAGAGCTTCTTGTCTACATTCGGC
GGGTATGGTCTTGGCTATCCCTTATGGGGGTGGCGCTTGTGGCGGTGTGGTCCGCTAA
AACCATGTTCTCAAAGATCATTTGTTGCCCAACTGGGTGCTGACCACAAGTGGCAGG
AAGCTGAATACCATTTCCAGTGTATACCCAGGNGGGTGACCAAAGGGGGTCNTTTNGA
CCTGGNGAAAGGAACCATCCAAANCTCTGNCCCATG

FIG. 15QQ

16503.1.edit

AGCGTGGNCGCGGCCGAGGTCTGAGGATGTAACTCTTCCCAGGGGAAGGCTGAAGTGCT
GACCATGGTGCTACTGGGTCCCTTCTGAGTCAGATATGTGACTGATGNGAACTGAAGTAGGT
ACTGTAGATGGTGAAGTCTGGGTGTCCCTAAATGCTGCATCTCCAGAGCCTTCCATCATT
CCGTTTCTTCTTTTGCTATGGGATGAGACACTGTTGAGTATTCTCTAAAGTCACCACTGAAA
TCTTCCTCCAAAGGAAAACCTGTGGAAGGCCCCATTCTGCCCCATAATTTGGTTCTCC
TAATCNCTCTGAAATCACTATTCCCTGGAANGTTTGGGAAAAANNGGCNACCTGNCAN
TGGAAANTGGATANAAAGATCCCACCAATTTACCCAACNAGCAGAAAGTGGGAANGGTAC
CGAAAAGCTCCAAGTAANAAAAAGGAGGGAAGTAAAGGTCAAGTGGGCACCAAGTTTCAA
ACAAAACCTTCCCCAACTATANAACCCA

16503.2.edit

AAGCGGCCGCGCGGCCAGGNNCAGNAGTGCCCTCGGGACTGGGNTCACCCCCAGGTCTGC
GGCAGTTGTACAGCGCCAGCCCCGCTGGCCTCCAAAGCATGTGCAGGAGCAAAATGGCAC
CGAGATATTCCCTTCTGCCACTGTTCTCTACCTGGTATGTCTTCCCATCATCGTAACACGTT
GCCTCATGAGGGTCACACTTGAATTTCTCTTTTCCGTTCCCAAGACATGTGCAGCTCATTG
GCTGGCTCTATAGTTTGGGGAAGTTTGTGAAGTGTGCCACTGACCTTTACTTCTCTCTT
CTCTACTGGAGCTTTCCGTACCTTCCACTTCTGCTGNTGGNAAAAAGGGNGGAACNTCTTA
TCAATTTCATTGGACAGTANCCCNCTTCTNCCC AAAACATNCAAGGGAAAAATTTGATTN
CNAGAGCGGATTAAGGAACAACCCNAATTA TGGGGGCCAGAAATAAAGGGGCTTTTCCA
CAGGTNTTTTCT

16504.1.edit

TCGACCGCGCGCGCGCGGAGGTCTGCAGGCTATTGTAAAGTGTCTGAGCACATATGAGAT
AACCTGGGCCAAGCTATGATGTTCCATAGGTTAGGTGATTAAATGCATTTTGACTGCCA
TCTCAGTGGATGACAGCCTTCTCACTGACAGCAGACATCTTCTCACTGTGCCAGTGGGCA
GGAGAAAGAGCATGCTCCGACTGACCTCGGCCCGACCAAGCT

16504.2.edit

AGCGTGGTCCGCGCGGAGGTCCAGTCCACCATGCTCTTTCTCTGCCCCTGGCACAGTG
ACGAAGATCTCTGCTGTCAGTGACAAGGCTGTCTCCACTGAGATGGCAGTCAAAAGTGC
ATTTAATACACCTAACGTATCGAACAATACCTTGGGCCAGGTTATCTCATATGTGCTCA
GAACACTTACAAATAGCTCCAGACCTGCCCCGGCGCGGCTCGA

FIG. 15RR

FIG. 1555

AGCGTGGTCGCGGCCGAGGTCAAGAACCCCGCCCGACCTGCCGTGACCTCAAGATGTGC
CACTCTGACTGGAAGAGTGAGACTGATTGACCCCAACCAAGGCTGCAACCTGGAT
GCCATCAAGTCTTCTGCAACTGGAGACTGTGAGACTCGCGTGTACCCCACTCAGCCCA
GTGTGGCCAGAGAAGAACTGGTACATCAGCAAGAACCCCAAGGACAAGGGCATGTCTGGT
TCGGCGAGAGCATGACCGATGGAATTCAGTTTCAGTAGTAGCGGCCCAAGGCTCCGACCCGT
CCGATGTGACACTCGCCCGNCCCGNCCGCTCGAAAAGCCCAATTTCCAGNCACTTGG
CCGGCCGTTACTACTG

TCGAGCGGCCCGCCCGGGCAGGTCCACATCGGCAGGGTCGAGCCCTGGCCGCCATACTCG
AACTGGAATCCATCGGTCTAGCTCTCGGCCAAGCCAGACATGCCTCTTGTCTTGGGGTCT
TGCTAGTACAGGTTCTCTCGGCCCACTGGGCTAGTGGGTTACACCGCAGGTCTCACC
AGTCTCCATGTTGCAGAAGACTTTGATGGCATCCAGGTTGACGGTCTGGTGGGGCTCAATC
CAGTACTCTCCACTCTTCCAGTCAGAGTGGGCATCTTGAGGTACGGCAGGTGCGGGCGG
GCTTCTTGACCTCGGCCCGGACCACT

CGAGCGGGCGGCGGGCAGGTCCCCCT

AGCCTGGTCCGGCCGAGCTCTGCCATTCTTCGACTTCTCTCCAGCCGAGCTTCCACAA
CATCACATACACTCCAAAAATACCAATTGCATACATGGATCAGGCCAGCTGGAATGTAAAT
GAAGGCCCTGAAAGCTGATGGGTCAAATGAAGCTGAATTCAAGGCTGAAGGAAATAGCA
AATCACTACACAGTTCTGGAGCATGGTTCGACCGAAACACTGCGGAATGGAGCAAAA
CAGTCTTTGAATAATCGAACACCGCAAGGCTCTGACACTACCTATTGTAGATATTGCAACCTA
TGACATTGGTGGTCTGATCAAGAAATTGGTGTGGACGTTGGCCCTGTTTCTTTTATAAA
CCAAAGCTCTATTCTGAAATCCCAACAAAAAAATTTAACTCCATATGTTCTCTCTTTGCT
AATCTTGGCAACAGTGCAAGCTGACCCGACAAAATTCAGTATTTATTTCCAAAAATGTTT
GAACACTATAAATTGACAAAGCAAAAAGGATAGTCTCTCTTTTGGCTGGTCCACCAAA
TACAATTCAAAAAGGCTTTTGGTTTATTTTTATNCCAATTCCAAATTCAAAAATGTCTCAA
TGGNGCTTATAATAAAATAAATTCACCTTTNTTTTNGAT

FIG. 15TT

16509.1.edit

ACCGTGGTGGCGGCGGAGGTCTGGGATGCTCCTGCTGCACAGTGAGATATTACAGGATC
 ACTTACGGAGAAACAGGAGGAAATAGCCCTGTCCAGGAGTTCACTGTGCCTGGGAGCAAG
 TCTACAGCTACCATCAGCGGCGCTTAAACCTGGAGTTGATTATACCATCACTGTGTATGCTG
 TCACTGGCCGTGGAGACAGCCCCGCAAGCAGCAAGCCAAITTCATTAAATTACCGAACAG
 AAATTGACAAACCATCCCAGATGCAAGTGACCGATGTTGAGGACAACAGCATTAGTGTCA
 AGTGGCTGCCCTTCAAGTTCCTCTGTTACTGGTTACAGAAAGTAACCACCACTCCCAAAAATG
 GACCAGGACCAACAAAACTAAAACTGCAGGTCCAGATCAAAACAGAAAATGGAATTTG
 AAGGCTTGCAGCCCAAGTGGAGTATGTGONTAGGNGTCTATGCTCAGAATCCCAAGCC
 GGAGAAAGTCAGCCTTCTGCTTTAGACTGCAGTAACCAACATTGATCGCCCTAAAGGACT
 GGNCATTCACTTGGATGGTGGATGTCCAATTC

16509.2.edit

TCGAGCGGCGGCGGCGGAGGTCTTGCAGCTCTGCAGNGTCTTCTTACCATCAGGTGCA
 GCGAATAGCTCATGGATTCCATCTCAGGGCTCGAGTAGGTACCCCTGTACCTGGAAACTT
 GCCCCCTGTGGGCTTTCCCAAGCAATTTTGATGGAATCGACATCCACATCAGNGAATGCCAG
 TCCTTTAGGGCGATCAATGTTGCTTACTCCAGTCTGAACCAAGAGGCTGACTCTCTCCGCTT
 GGATTCTGAGCATAGACACTAACCACATACTCCACTGTGGGCTGCAAGCCCTCAATAGTCA
 TTTCTGTTTGATCTGGACCTGCAGTTTAAGTTTTTGGTGGTCTGNCCTATTTTGGGAAG
 TGGGGGGTTACTCTGTAACTAGTAACAGGGGAACCTTGAAGGCAGCCACTTGACACTAATG
 CTGTTCTCTGAACAATCGTCACTTGCATCTGGGATGCTTTTGACAAITTCGTTGGGCA
 AATTAATGGAATTCGCTTCTGCTTGGCGGGCTGNCCTCACGGGCCAGTGACAGCATA
 C

16510.1.edit

TCGAGCGGCGGCGGCGGAGGTCTTGCAGCTCTGCAGTGTCTTCTTACCATCAGGTGCA
 GCGAATAGCTCATGGATTCCAATCTCAGGGCTCGAGTAGGTACCCCTGTACCTGGAAACTT
 GCCCCCTGTGGGCTTTCCCAAGCAATTTTGATGGAATCGACATCCACATCAGTGAATGCCAG
 TCCTTTAGGGCGATCAATGTTGCTTACTCCAGTCTGAACCAAGAGGCTGACTCTCTCCGCTT
 GGATTCTGAGCATAGACACTAACCACATACTCCACTGTGGGCTGCAAGCCCTCAATAGTCA
 TTTCTGTTTGATCTGGACCTGCAGTTTAAGTTTTTGGTGGTCTGNCCTATTTTGGGAAG
 GGGGTGGTTACTCTGTAACTAGTAACAGGGGAACCTTGAAGGCAGCCACTTGACACTAATG
 CTGCTGGCTGAACATCGCTCACTTGCATCTGGGATGCTTTGGTCAATTTCTGTTGGTAAAT
 TAATGGGAAATTCGCTTACTGGCTTGGCGGGCTGTCTCCAGGNCAGTGACAGCATA
 ACAGGNGATGGGTATAATCAACTCCAGGTTTAAGGCCNCTGATGGTA

16510.2.edit

ACCGTGGTGGCGGCGGAGGTCTGGGATGCTCCTGCTGCACAGTGAGATATTACAGGATC
 ACTTACGGAGAAACAGGAGGAAATAGCCCTGTCCAGGAGTTCACTGTGCCTGGGAGCAAG
 TCTACAGCTACCATCAGCGGCGCTTAAACCTGGAGTTGATTATACCATCACTGTGTATGCTG
 TCACTGGCCGTGGAGACAGCCCCGCAAGCAGTAAGCCAAITTCATTAAATTACCGAACAG
 AAATTGACAAACCATCCCAGATGCAAGTGACCGATGTTCAAGGACAACAGCAATTAGTGTCA
 AGTGGCTGCCCTTCAAGTTCCTCTGTTACTGGTTACAGACTAACCACCACTCCCAAAAATGG
 GACCAGGACCAACAAAACTAAAACTGCAGGTCCAGATCAAAACAGAAAATGGAATTTG
 AAGGCTTGCAGCCCAAGTGGAGTATGTGONTAGGNGTCTATGCTCAGAATCCCAAGCC
 AGAGAGTCAGCCTTCTGCTTCAACT

FIG. 15UU

16511.1.edit

TCGAGCGGCGCGCGGGGAGGTACAGCGCTCTCAGGACGTACACCACCATGGCCTGGGCTCT
GCTCCTCCTCAGCCTCCTCACTCAGGGCACAGGGTCTGGGCCCAGTCTGCCCTGACTCAG
CCTCCTCCGCGTCCGGGTCTCCTGGACAGTCAGTCACCATCTCCTGCACTGGAACCAGCA
GTGACGTTGGTGCTATGAATTTGTCTCTGGTACCAACAACACCCAGGCAAGGCCCCCAA
ACTCATGATTTCTGAGGTCACTAAGCGGCCCTCAGGGGTCCCTGATCGCTTCTCTGGCTCC
AAGTCTGGCAACACGGCCTCCTGACCGTCTCTGGGCTCCANGCTGAGGATGANGCTGATT
ATTACTGGAAGCTCATATGCAGGCAACAACAATTGGGTGTTGGGCGGAAGGGACCAAGCT
GACCGTACTAAGGTCAAGCCCAAGGCTTCCCCCTCGGTCACTCTGTTCCACCCCTCCTCT
GAAGAAGCTTTCAAGCCAACAANGNCACACTGGGTGTGTCTATAAGTGACTTTCTACCC

16511.2.edit

AGCGTGGTGGCGGGGAGGTCTGTAGCTTCTGTGGGACTTCCACTGCTCAGGCGTCAGGCT
CAGGTAGCTGCTGGCGCGTACTTGTGTGCTTTGNTTGGAGGGTGTGGTGGTCTCCACT
CCCGCCTTGACGGGGCTGCTATCTGCTTCCAGGCCACTGTCACGGCTCCCGGGTAGAAGT
CACTTATGAGACACACCAGTGTGGCCTTGTGGCTTGAAGCTCCTCAGAGGAGGGTGGGA
ACAGAGTGACCGAGGGGGCAGCCTTGGCTGACCTAGGACGGTCACTTGGTCCCTCCGC
CGAACACCCAATTGTTGCTTGCCTGCATATGAGCTGCCAGTAATAATCAGCCTCATCTCAGC
CTGGAGCCCAAGACNGTCAAGGGAGGGCGGTGTTGCCAAGACTTGGAAAGCCAGANAAG
CGATCAGGGACCCCTGAGGGCCCTTTACNGACCTCAAAAAATCATGAATTTGGGGGGCC
TTTGCTGGGNGTTGCTTGGTACCAGNAAAAACAAAATTCATAAAGCACCAACGTCAT
GCTGTTTCCAGTGCANGAANAATGGTCAACTGAANTGTCC

16512.1.edit

AGCGTGGTGGCGGGGAGGTCCAGCATCAGGAGCCCCGCTTGGCGGCTCTGGTCACTGCC
TTTCTTTTTTGGGCTGAAACGATGTCTCAATTCGAGTAGCAGAACTGCCGTCTCCACTG
CTGTCTTATAAGTCTGCCAGCTTCACAGCCAAATGGCTCCCATATGCCCACTTCTTCACTGCC
ACCAAGTACCCGTCTCACCATTTACACCCAGGTCTCACAGTTCTCCTGGGTGTCTTGG
CCCGAAGGGAGGTAAGTANACGGATGGTCTCTGCTCCACAGTTCTGGATCAGGGTACGAG
GAATGACCTCTAGGGCCTCCGCNACAAACCTGTATGACCTGCCCGGGCGGGCCGCTC
GA

16512.2.edit

TCGAGCGGCGCGCGGGGAGGTCCATACAGGGCTGTTGCCAGGGCCTAGAGGNCATTCC
TTGTACCCCTGATCCAGAAGTGTGGGACAGCAGCATCGGTCTACTTACCTCCCTTGGGGCC
AACCACACCCAGGAGAACTGTGAGACCTGGGGTGTAAATGONGACAGGGTACTTTGGTG
GACATGAAGGAAGTGGGATATGGGACCAATGGCTGNGAAGCTGCANACTTATAAGACA
GCAGTGGAGACGGCAGTTCTGCTACTGCAATTGATGACATCGTTTCAGGCCACAAAAAG
AAAGGGGATGACCANAGCCGGCAAGCGGGGCTTCTGATGCTGGACCTGGCCCGCCGAC
CACGCTT

FIG. 15VV

16514.1.edit

AGCGTGGTCGCGGCGGAGGTCCACTAGAGGTCTGTGTGCCATTGCCCAGGCAGAGTCTCTG
CGTTACAAAGTCCTAGGAGGGCTTGCTGTGCGGAGGGCCTGCTATGGTGTGCTGCGGTTCA
TCATGGAGAGTGGGGCCAAAGGCTGCGAGGTTGTGGTGTCTGGGAACTCCGAGGACAGA
GGGCTAAATCCATGAAGTTTGTGGATGGCCTGATGATCCACAGCGGAGACCCTGTAACTA
CTACGTTGACACTGCTGTGCGCCACGTGTTGCTCANACAGGGTGTGCTGGGCATCAAGGTG
AAGATCATGCTGCCCTGGGACCCANCTGGCAAAATGGCCCTTAAAAACCCCTTGCCNTG
ACCACGTGAACCAATTTGTGNGAACCCCAAGATGAANATACTTGCCACCAACCCCATTC

16514.2.edit

TCGAGCGGGCGCCCGGGCAGGTCTGCCAAGGAGACCCTGTTATGCTGTGGGACTGGCTG
GGGCATGGCAGCGGGCTCTGGCTTCCACCCCTTCTGTTCTGAGATGGGGGTGGTGGCAGT
ATCTCATCTTTGGGTTCCACAATGCTCAGTGTGTCAGGCAGGGGCTTCTTAGGCCCAATCT
TACCAGTTGGGTCCAGGGCAGCATGATCTTACCTTGATGCCACAGCACCCCTGTCTGAG
CAACACGTGGCGCACAGCAGTGTCAACGTAGTAGTTAACAGGGTCTCCGCTGTGGATCAT
CAGGCCATCCACAACCTTCATGGAATTAGCCCTCTGTCCTCGGAGTTTCCAAAACACCAC
AACCTCGGCAGCCTTTGGGCCCCACTTCTTCATGAATGAACCGGCAGCACACCAATTANCAA
GGCCCTTCCGCACAGGNAAGCCCTTCTAAGGAGTTTGTAAACGC.AAA.AAACTCTTGCT
GGGGCAATGGGCACACAGACCTNTANTNGGACCTTGGNCCCGAACCACCGCT

16515.1.edit

AGCGTGGTCGCGGCGGAGCTCTGCGGCTGCTGGCAAGGCTGCTGAAGATGGTCACCCCTGG
AAAACCCGGACCGACCTGCTGAGAGAGGAGTTGTTGGACCACAGGCTGCTGCTGGTTTCCC
TGGAACTCCTGGAGTTCTGCTTCAAGGCCATTAGGGGACACAAATGGTCTGGATGGATTG
AAGGGACAGCCCGCTGCTGCTGCTGCAAGGGTGAACCTGGNCCCTGCTGAAAATGGA
ACTCCAGGTC.AAACAGGAGCCGNGGGCTTCTGGNGAGAGAGGACGTGTTGGTGGCCCT
GGCCANACCTGGCGGGCGGGGCTCNAAAAGCCGAAATCCAGNACACTGGCGCCGNT
ACTANTGGAATCCGAACCTTCCGTACCAAGCTTGGCCGTAATCATGGCCATAGCTTGTTC
CTGGCGNGGAAAATGGTATTCGCTNCAAATTCACACAAACATACCGAACCCGGAAAGCA
TTAAAGTCT.AAAAGCCCTGGGGGGGCTAAATGAGCTGAGCNTAACTCNCATTTAAATTGG
CGTTGCGCTTCACTGCCCGCTTTTCCAGTCCGGNA

16515.2.edit

TCGATCGGGCGCGCGGGCAGGTCTGCGGAGGGCCACCAACAGCTCCTCTCTCACCAGGA
AGCCACCGGCTCCTGTTGACCTGGAGTTCCATTTTACCAGGGGACCAAGGTTACCCCT
TCACACAGGAGCAGCGGCTGTCCCTTCAATCCAATCCAGACCATTTGTONCCCT.AATGCC
TTTG.AAGCCAGGAAGTCCAGCAATTCAGGG.AAACACGAGCACCCCTGTGGTCCAACAAC
TCCTCTCTCACCAGGTCCTCCGGTTTCCAGGCTACCATCTTACCAGCCTTGCCAGGA
GGGCCAGACCTCGCGCGGACACCGCT

FIG. 15WW

16516.1.edit

ANCGTGGTCGGCGCCGAGGTCTCACCAGAGGTGNCACCTAC.AACATCATAGTGGAGGCA
CTGAAAGACGANCAGAGGCATAAGGTTCCGGAAAGAGG

16516.2.edit

TCGAGCGGCGCCCGGGCAGGTCCATTTTCTCCCTGACGGTCCCACTTCTCTCCAATCTTGT
AGTTCACACCAATTGTCTATGGCACCA.TCTAGATGAATCACAATCTGAAATGACCACITCCAAA
GCCTAAGCACTGGCACAACAGTTTAAAGCCTGATTCAGACATTCTTCCCACTCATCTCCA
ACGGCATAATGGGAAACTGTGTAGGGGTCAAAGCACGAGTCATCCGTAGGTTGGTTCAAG
CCTTCGTTGACAGAGTTGTCCACGGTAACAACCTCTTCCCGAACCTTATGCCTCTGCTGGTC
TTTCAGTGCCTCCACTATGATGTTGT.AGGTGGCACCTCTGGTGAGGACCTCNGNCCNGAAC
AACGCTTAAGCCCGNATTCTGCAGATAATCCCATCACACTTGGCGGCCGCTTCGANCATG
CATCNTAAAAGGGGCCCC.AATTTCCCTTATAAGNGAANCCGTATTNCCAAATTTCACTG
GNCCCGCCGNTTTTACAAACGNCGGTGA.ACTGGGAAAAACCTGGCGGTTACCCAACTT
TAATCGCCNTTGGCAGCAC.AATCCCCCTTTTCGNCCANCTGGGCGTAAATAACCGAAAA

16517.1.edit

ANCGNGTTCGGCGCCGAGCTNTTTTCTTNTTTTTT

16518.1.edit

ACCGTGGTCGGCGCCGAGGTCTGAGCTTACATGCGTGGTGGTGGACGTGAGCCACGAAGA
CCCTGAGGTCAAAGTTCAACTGGTACGTGGACGGGCTGGAGGTGCATAATGCCAAGACAAA
GCCCGGGGAGGAGCACTAC.AACAGCACGTACCGGGNGGTACGGTCTCACCCTCTGCA
CCAGAATTGCTTGAATGGCAAGGAGTACAAGNGCAAGGTTTCCAACAAAGCCNTCCCAGC
CCCCNTCGAAAAAACATTTCCAAAGCCAAAGGGCAGCCCCGAGAACACAGGTGTACAC
CCTGCCGCCATCCCGGGAGGAAAAAGANCAANAACCGGTTACGCCTTAACTTGCTTGGTC
NAANGCTTTTATCCCAACGNACTTCCCCCNTGGAANTGGGAAAAACCAATGGGCCAANC
CGAAAAACAATTACAA.AACCCC

16518.2.edit

TCGACCGCGCGCCCGGGCAGGTGTCCGAGTCCAGCACGGGAGGCGTGGTCTTGTAGTTGT
TCTCCGGCTGCCCATTTGCTCTCCCACTCCACGGCGATGTCCCTGCCATAGAAGCCTTTGAC
CAGGCAGCTCAGGCTGACCTGGTTCTTGGTCATCTCTCCCGGATGGGGCAGGGTGAA
CAGCTGGGTTCTCGGGGCTTCCCTTTGGTTTGAANATGGTTTCTCGATGGGGGCTGG
AAGGGCTTGTGNAAACCTTCCACTTCACTCTTGGCATTACCCAGNCCTGGNCCAGGA
CGNGAGGACNCTNACCACACGGAAACCGGCTGGTGGACTGCTCC

FIG. 15XX

16319.1.edix

ACGGTGGTGGCGGACGANGTCTGTGACAGTGGNACTGGTAGAAGTTCANGAACCTGA
ACTGTAAAGGGTCTCTCATCAGTGCCAAACAGGATGACATGAAATGATGTACTCAGAAAGNGN
CCTGGAAATGGGCCCCATGANAATGGTTGCC

16519.2 edit

TCGAGCGGCGCCCGGGC.AGGTCC.ACC.ACACC.AATTCCTTGCTGGTATCATGGCAGCCGC
CAGCTGCCAGGATTACCGGCTACATCAT.AAGTATGAGAAGCCTGGGTCTCTCCCAAGA
AGTGGTCTCTCGCCCGCTGGTGTCA.AGAGGCTACTTAATTACTGGCTGGAACCGGGA
ACCGAATATAC.AATTTATGTCATTGCCCTAGAAATACTAGAAGGCGCCCTGATTG
GAAGGAAAAAGACAGAGCGAGTCTCCCA.ACTGGTAACCTTCCACACCCCAATCTT.CATG
GACAGAGACTCTTGATGTTCTTCTTCA.AGTTCAAAAGACCCCTTTCGGCACCCCCTGG
GTATGAACCTGGGAAAAANGGNANTTA.ANCTTCTCGGCA

16520.1.edit

ACGCTGGTGCCTCCGCGGAGGCTCTGGATGCTCTGCTGTACAGTGAATATTACAGGATC
ACTTACGGAGAAACAGGAGGAAATAGCGCTGTCCAGGAGTTCACTGTGCTCTGGAGGCAAG
TCTACAGCTACCATACCGCGCTTAACCTGGAGTTGATTATCACTCACTGTGTATGCTG
TCACTGCGCGCTGGAGACAGCGCGCGCAAGCAGCAAGCCAAATTTCCATTAAITACCGAACAG
AAATTGACAAACCATCCAGATGCCAAGTGACCGATGTTCCAGGACAACAGCAATTAGTGTCAT
AGTGGCTGCCCTCAAGGTTCCTGCTACTGGGTACAGTACAGTAAACCACTCCCAAAAAATG
GACCAAGAACCAAAAACTTAAATCCGAGGCTCAGATCAAAACAGCAATGACTATTGA
ANGCTTGCACCCCACTACGGAGATATGCGGTAGTGTCTATGCTTCAGAAATCCAAAGCGGA
AAAAATGCAACGGCTCTGCGGTTCAA

16520.2.edjv

TCGAGCGGGCGCGCGCGGCAGGTCCTTCCAGCTCTGCAGTGTCTTCTTCACCATCAGGTGCA
GGGAATAGCTCATATGATATCCATCTCTGGAGCTCGAGTAGCTACCTGTACCTGGAAACTT
GGCACTGTGGGCTTCCCAAGCAATTTTGGATGGAAATGCACATCCACATCAGTGAATGGCAG
TCCTTACGGCGCATCAATGTTGGTTACTGCAAGNCTGAACACAGGCTGACTCTCCGCTT
GGAATTCTGAGCATAGACATCAACACATACTCCACTGTGGGCTGCAANCTTCAATAANNAC
ATTCTGTTTGATCTGGAACC

16521.2.edir

TCGAGCGCCGCCGCCGCCAGGTCTGGTGGGTCTTGGCACACGCACATGGGGGNGTTGNT
CTNATCCAGCTGCCGACGCCCAATGGCGAGCTTGAGAAAGGTGTGCAGCAATGACAACAA
NACCTTCGACTCTCTGGCGACTTCTTCCCAACAAGTGACACCTTGGAGGCCAACCAAGAAG
GGCCACAAGCTCCACCTGGACTACATCGGGGCTTGCAAAATCAATCCCGGCTTGGCTGACT
CTGAGCTGACGCGAATTCGGCTTGGCCATCTCGGGACTCGCTCAAGAACCGTCTGGCACCC
TTGATACNAGCGCTGAAGACACNAGCC

FIG. 15YY

16522.1.edit

AGCGTGGTGGCGGGGAGGTCTGTCTACAGTCTCAGGACTCTACTCCCTCAGCAGCGTG
GTGACCGTGGCCTCCAGCAACTTCGGCACCCAGACCTACACCTGCAACGTAGATCACAAGC
CCAGCAACACCAAGGTGGAC.AAGAGAGTTGAGCCCAAATCTTGTGACAAAACTCACACAT
GCCCACCGTGGCCAGCACCTGA.ACTCCTGGGGGGACCGTCAGTCTTCTTCCCCCGCAT
CCCCCTTCCA.AACCTGCCCGGGCGGCGCTCG.AAAGCCGAATTCCAGCACACTGGCGGGCG
GTACTAGTGGANCCNA.ACTTGGNANCCAACTGGNGGAANTAATGGGCATAANCTGTTTC
TGGGGGGAAATTGGTATCCNGTTTACA.ATTCCNCACAACATACGAGCCGGAAAGCATAAA
AGNGTAAAAGCCTGGGGGNGGCCTANTGAAGTGAAGCTAAACTCACATTAATTNGCGTTG
CCGCTCACTGGCCCGCTTTTCCAGC

16522.2.edit

TCCAGCGGGCCCCCGGGC.AGGTTTGAAGGGGGATGCGGGGAAGAGGAAGACTGACGG
TCCCCCAGGAGTTT.CAGGTGCTGGGCACGGTGGGCATGTGTGAGTTTGTCA.AAAGATTG
GGCTCAACTCTCTTGTCCACCTTGGTGTGCTGGGCTTGTGATCTACGTTGC.AGGTGTAGGT
CTGGGNGCCGAAGTTGCTGGAGGGC.ACGGTACCCAGCTGCTGAGGGAGTAGAGTCTGA
GGACTGTANGACAGACCTCGGCGGNGACCAGCT.AAGCCGAATTCTGCAGATATCCATCA
CACTGGCGGGCGCTCCGAGCATGC.ATTTAGAGG

16523.1.edit

AGCGTGGNCGCGG.ACGANCA.ACA.AACCCC

16523.2.edit

TCCAGCGGGCCCCCGGGC.AGGNCCACATCGGC.AGGGTGGAGCCCTGGCGGGCATACTCG
AACTGGAATCCATCGGTATGCTCTTGGGAAACCAGACA.TGCCTCTTGTCTTGGGTTCTT
GCTGATGNACCAAGTTCTTCTGGGGCACACTCGGCTGAGTGGGGTACACGC.AGGTCTCACC.A
GTCTCCATGTTGCCA.AGACTTTGA.TGGCATCCAGTTGCAGCCTTGGTTGGGGTCAATCC
AGTACTCTCCACTCTTCCAGTCA.GACTGCCACATCTTGAGGTACGGC.AGGTCCGGCGGG
GTTCTTGACCT

16524.1.edit

AGCGTGGTGGCGGGGACGTCCAGCCTGGACATA.ANGGTGAAGGTGCTGCCCCGGACTT
CCAGGTATAGCTGGACCTCGTGGTAGCCCTGGTGAGAGAGGTGA.AACTGGCCCTCCAGGA
CCTGCTGGTTTCCCTGGTCTCTGGACAGAAATGGTGAACCTGGNGGTA.AAGGAGAAAGA
GGGGCTCGGNTGANA.AAGGTGA.ACGAGCCCTCTGNATTGGC.AGGGGCCCCANGACTT
AGAGGTGGAGCTGGCCCCCTGGCCCCGAAGGACCA.AAGGTGCTGCTGGTCTCTCTGGG
CCACCTGG

FIG. 15ZZ

TCGAGCGGCGCGCCGGGCAGGTCTGGGCCAGGAGGACCAATAGGACCAGTAGGACCCCTT
GGGCCATCTTTCCCTGGGACACCATCAGCACCTGGACCGCCTGGTTACCCCTTGTCACCCCTT
TGGACCAGGACTTCCAAAGACCTCCTCTTTCTCCAGGCACTTCTCGACAGCAGGATGACCA
NCAGACCAAGGTGGCCACGAGGAGCAGCAGCACCCCTTCTCCTCTGGGACCAAGGGGA
CCAGTCCACCTCTAAGTCTGGGGCCCTGCCAATCCAGGAGGGCTCCTTACCTTTCTC
ACCCGGAGCCCTCTTTCT

TCGAGCGCCGCCCGGGGCAGGTCCACCGGGATATTCGGGGTCTGGCAGGAATGGGAGGC
ATCCAGAACGAGAAAGGAGACCATGCAAAAGCCTGAACGACCGCTGGCCTCTTACCTGGAC
AGACTGAGGAGCCTGGAGACCGCAACCGGAGGCTGGAGAGCAAAATCCGGGAGCACT
GGAGAAGAAAGGGACCCCAAGTTCAGACACTGGAGCCATTACTTCAAGATCATCGAGGACCT
GAGGGCTCANATCTTCGCAAACTACTGCNAGATGCCCCG

ATGCGNGGTCGGCGCGCANGACCANCCTCTGGCTCATACTTGACTCTAAAGNCNTCACCAG
NANTTACCGNCATTCGCAATCTGCACACCATGCGGGCAATTGTCGGCANTATTGGGAAG
ATCTGACCGCTCAGNCSTCGCATGATCTTGAGATGCGGCTCCAGTCTCTGACCTGGGGTC
CCTTCTTCTCCAAAGTGCTCCGGCATTTGCTCTCCAGCTCGGGTCTCGGCTTCCAAAGNCT
TCTCACTCTCTCCAGCAAAAGACGGCGAGGGCGGNCATCAGGGCTTTTGGCATGGAG

AGCGTGGTGGCGGCGGAGGTTGTACAAGCTTTT

TCGAGCGGGCGCCCGGGCAGGCTCTGCCAACACCAAGATTGGCCCCCGCCGCATCCACACA
GTGTGGTCTGCGGGGAGGTAACAAAGAAATACCGTGCCCTGAGGNTGGACGNGGGGAATTTTC
TCTGGGGCTCAGAGTGTGTGATCTCGTAAACAAAGGATCATCGATGTTGTCTACAATGCAT
CTAATAACGAGCTGTGCTACCAACAGCCCTGTGAAGAATTCGATCGTGCTCATNGACA
GCACACCGTACCGACAGTGGGTACCGAAGTCCCACTATGNCCT

FIG. 15.44A

16528.1.edit

TCGAGCGGGCCCCCGGGCAGGTCCACCACACCCAATTCCTTGCTGGTATCATGGCAGCCGC
CACGTGCCAGGATTACCGGCTACATCATCAAGTATGAGAAGCCTGGGTCTCCTCCCAGAGA
AGTGGTCCCTCGGCCCCCGCCTGGTGTACAGAGGCTACTATTACTGGCCTGGAACCGGGA
ACCGAATATACAAATTTATGTCAATGCCCTGAAG

16528.2.edit

AGCGTGNTCNCGGCCGAGGATGGGGAAGCTCGNCTGTCTTTTTCCTTCCAATCAGGGGCTN
NNTCTTCTGATTATTCTTCAGGGCAANGACATAAAATGTATATTCCGNTCCCGGTTCCAGN
CCAGTAATAGTAGCCTCTGTGACACCAGGGCGGGCCGAGGGACCACCTTCTCTGGGAGGA
GACCCAGGCTTCTCATCTTGTATGATGAAGCCGGTAATCCTGGCACGTGGGCGGCTGCCAT
GATACCACCAANGAATTGGGTGTGGTGGACCTGCCCGGGCGGGCGCTCGAAAANCCGAA
TTCNTGCAAGAATATCCATCACACTTGGGCGGGCCGNTCGAACCATGCATCNTAAAAAGG
CCCCAATTTCCCCCTATTAGGNGAAGCCNCATTTAACAAATTCACCTTGG

16529.1.edit

TCGAGCGGGCCCCCGGGCAGGTCTCCCGCTGGCACTGGTGATGCTGGTCTGTGGTCCCC
CCGGCCCTCCTGGACCTCCTGGTCCCGCTGGTCTCCTCCAGCGCTGGTTTCGACTTCAGCTTC
CTGCCCCACCCACCTCAAGAGAAGGCTCACGATGGTGGCCGCTACTACCGGGCTGATGAT
GCCAATGTGGTTGGTGACCGTGACCTCGAGGTGGACACCACCTCAAGAGCCTTGAGCCA
GCAGAATCGAAAACATTGGAACCCAAAGAGGGCAAGCCCCGAAAGAAAACCCCGCCCCC
ACCTGGCCGNGAACCTCCAAGAAAGTCCCCACNTCTTGACTGGCAAAAAAAGGGAAAANT
ACTTGGAAATGGAC

16529.2.edit

AGCGTGGTCCGGCCCGAGGTCCACATCCCGAGGGTCCGAGCCCTGGCCGCCATACTCGAA
CTGGAATCCATCGGTCAATGCTCTCCCGCAACCAGACATGCCTCTGTCTTGGGTTCTTGC
TGATGTACCAAGTTCTTCTGGGCCACACTGGCTGAGTGGGTACACCGAGGTCTCACCAAT
CTCCATGTTCCAGAAAGACTTTGATGGCATCCAGGTTGCAGCCTTGGTTGGGTTCAATCCAG
TACTCTCCACTCTTCCAGTCAGAACTGGCACATCTTGAGGTACGGCAGGGTGGGGGCGGG
GTTCTTGGGGCTGCCCTTCTGGCTCCCGCAATGTTCTNNGAATCTCTCG

FIG. 15BBB

16530.1.edit

AGCGTGGTCGCGGCCGAGGTCCACTAGAGGTCTGTGTGCCATTGCCAGGCAGAGTCTCTG
CGTTACAACTCCTAGGAGGGCTTGCTGTGCGGAGGGCCTGCTATGGTGTGCTGCGGTTCA
TCATGGAGAGTGGGGCCAAAGGCTGCGAGGTTGTGGTCTCTGGGAACTCCGAGGACAGA
GGGCTAAATCCATGAAGTTTGTGGATGGCCTGATGATCCACAGCGGAGACCCTGTAACTA
CTACGTTGACACTTGCTGTGCGCCACGTGTTGCTCANACANGGGTGGGCTGGGCATCAAG
GNG

16530.2.edit

TCGAGCGGCCGCCCCGGCCAGGTCTGCCAAGGAGACCCTGTTATGCTGTGGGACTGGCTG
GGGCATGGCAGGCGGCTCTGGCTTCCCACCCCTTCTGTTCTGAGATGGGGGTGGTGGGCAGT
ATCTCATCTTTGGGTTCCACAATGCTCACGTGGTCAGGCAGGGGCTTCTTAGGGCCAATCT
TACCAGTTGGGTCCCAGGGCAGCATGATCTTCACCTTGATGCCAGCACACCCTGTCTGAG
CAACACGTGGGCCACAGCAAGTGTCAACGTAAGTAAGTTAACAGGGTCTCCGCTGTGGAT
CATCAGGCCATCCACAACTTCATGGATTTAACCCCTCTGTCTCGGAG

16531.1.edit

TCGAGCGGCCGCCCCGGCCAGGTCTTTCAGAGGTCCAAAGGTCCACTGTGAGGTCCCAGG
AGTGCTGGTGGTGGGCACACAGGTCCGATGGGTGAAACCAATTGACATAGAGACTGTTCTT
GTCCAGGGGTGTAAGGGGCCAGCTCTTTGATGCCATTGGCCAGTTGGCTCAGTCCCAGTAC
AGCCGCTCTCTGTTGAGTCCAGGGCTTTGGGGTCAAGATGATGGATGCGAGATGGCATCCA
CTCCAGTGGCTGCTCCAACCTTCTCGGACCTGAGAGAGGTGAGTCTGACGCCAGAGTACAG
AGGGCCAACTCGTGTCTTTGAATA

16531.2.edit

AGCGTGGTCGCGGCCGAGGTCTGTACTCGGAGCTAAGCAAACCTGACCAATGACATTGAAG
AGCTGGGCCCCCTACACCCTGGACAGCAACAGTCTCTATGTCAATGTTTTACCCATCAGAG
CTCTGTGNCACACCAAGCACTCTGCGACCTCCACAGTGGATTTCAAGACCTCAGGCACT
CCATCCTCCCTCTCCAGCCGACAAATATGGCTCTGCGCCTCTCCTGGTACCATTACCCCT
CAACTTCACCATCAACCAACCTGCACTATGGGAGGACATGGGTACCCCTGNCCTCCAGGAA
GTTCAACACCACA

16532.1.edit

TCGAGCGGCCGCCCCGGACAGGTCTGGGCGGATAGCACCGGCCATATTTGGAAATGATGA
GGTCTGGCACCCCTGAGCAGTCCAGCCAGGACTTGGTCTTAGTTGAGCAATTTGGCTAGGAG
GATAGTATGCAACGCGNCTCGAGNCTGTGGATAGCTGCCATGAAGTAACCTGAAGGAG
GTGCTGGCTGTANGGGTTGATTACAGGGTTGGGAACAGCTCGTACACTTGGCATTCTCTG
CATATACTGCTTAGTGAGGTGAGCTGGCCCTCTCTTTTG

FIG. 15CCC

01_16558.3.edit

AGCGTGGTCGCGGCCGAGGTGAGCCACAGGTGACCGGGCTGAAGCTGGGGCTGCTGGNC
CTGCTGGTCCTG

02_16558.4.edit

CAGCNGCTCCNACGGGGCCTGNGGGACCAACAACACCGTTTTACCCCTTAGGCCCTTTGGC
TCCTCTTTCTCCTTTAGCACCAGGTTGACCAGCAGCNCANCAGGACCAGCAATCCATTG
GGGCCAGCAGGACCGACCTCACCACGTTACACAGGGCTTCCCCGAGGACCAGCAGGACCA
GCAGGACCAGCAGCCCCAGCTTCGCCCCGGTCACCTGTGGCTCACCTCGGCCGCGACCAG
CT

03_16535.1.edit

TCGAGCGGTGCCCCGGGCAGGTCCACCGGATAGCCGGGGTCTGGCAGGAATGGGAGGC
ATCCAGAACGAGAAGGAGACCATGCAAGGCTGAACGACCGCCTGGCCTTTACCTGGAC
AGAGTGAGGAGCCTGGAGACCGANAACCGGAGGCTGGANAGCAAAATCCGGGAGCACTT
GGAGAAGAAGGGACCCCAAGCTCAAGAGACTGGAGCCATTACTCAAGATCATCGAGGGA
CCTGGAGG

04_16535.2.edit

AGCGNGGTGCGGGCCGAGGTCCAGCTCTGTCTCACTTGACTCTAAAGTCAACAGCACA
AGACGGGCATTGTCAATCTGCAGAACCATGCGGGCATTGTCCGCAGTATTTGCGAAGATCT
GAGCCCTCAGGTCTCGATGATCTTGAAGTAATGGCTCCACTCTCTGACCTGGGTCCCTT
CTTCTCAAAGTGCTCCCCGATTTGCTCTCTAGCCTCCGGTCTCGGTCTCCAGGCTCCTCA
CTCTGTCCAGGTAAAGAAGCCCAAGCCGCTCTTCAAGGCTTTGCATGGTCTCCTTCTCGTTCT
GGATGCCTCCCAATCTGCCAGACCC

05_16536.1.edit

TCGAGCGGGCCCCGGGCAGGTCAGCAACACACTTGGTCTTAGAGCCACTGCCCTCCTGGA
TTCCACTGTGCTGCGGACATCTCCAGGGAGTGCAGAAGGGAAGCAGGTCAAACCTGCTCA
GATCAGTCAGACTGGCTGTTCTCAGTCTCACCTGAGCAAGGTCACTCTGCAGCCAGAGTA
CAGAGGGCCAACACTGGTGTCTTGAACAAGGGCTTGAGCAGACCCTGCAGAACCTCTTC
CGTGGGTTTGAACCTTCTGCAACCAGGGTGTTCATGTTTTCTCATAATGCAAGGTTG
GTGATGG

FIG. 15DDD

07_16537.1.edit

AGCGTGGTCGCGGCGGAGGTCCACATCGGCAGGGTCGGAGCCCTGGCCGCCATACTCGAA
CTGGAATCCATCGGTTCATGCTCTCGCCGAACCAGACATGCCTCTTGTCCTTGGGGTTCTTGC
TGATGTACCAGTTCTTCTGGGCCACACTGGGCTGAGTGGGGTACACCGCAGGTCTCACCAG
TCTCCATGTTGCAGAAGACTTTGATGGCATCCAGGTGTCAGCCTTGGTTGGGGTCAATCCA
GTACTCTCCACTCTTCCAGTCAGAAGTGGGCACATCTTGAGGTACCCGGCAGGTGCCGGGC
CGGGGGTTCTTGGGCTTGGCCTCTGGGCTCCGGATGTTCTCGATCTGCTTGGCTCAGGCTC
TTGAGGGTGGGTGTCCACCTCGAGGTACGGTCACCGAAACCTGCCGGGGCGCCCGCTC
GA

08_16537.2.edit

TCGAGCGGTGCGCCGGGCAGGTTTCGTGACCGTGACCTCGAGGTGGACACCACCCTCAAG
AGCCTGAGCCAGCAGATCGAGAACATCCGGAGCCCAGAGGGCAGCCGCAAGAACCCCGC
CCGCACCTGCCGTGACCTCAAGATGTGCCACTCTGACTGGAAGAGTGGAGAGTACTGGAT
TGACCCCAACCAAGGCTGCACCTGGATGCCATCAAAGTCTTCTGCAACATGGAGACTGGT
GAGACCTGCGTGTACCCCACTCAGCCCAGTGTGGGGCCAGAAGAACTGGTACATCAGCA
AGGAACCCCAAGGACAAGAGGCATTGTCTTGTTCCGCGAGNAGCATGACCCGATGGATT
CCAGTTTCGAGTATTGGCGGCCAGGGCTTCCCGACCCTTGCCGATGTGGACCTCGGCCGCG
ACCACCGCT

FIG. 15EE

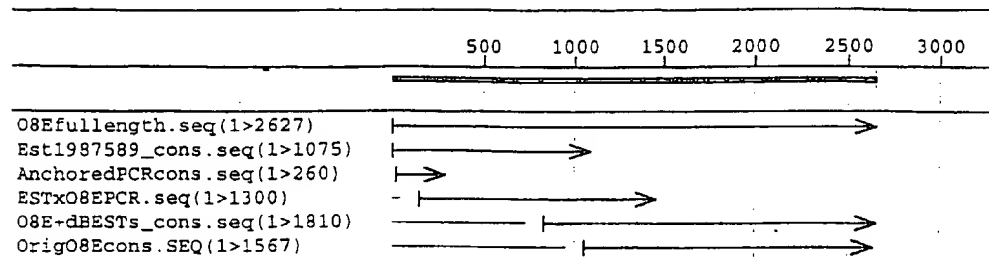


Fig. 16